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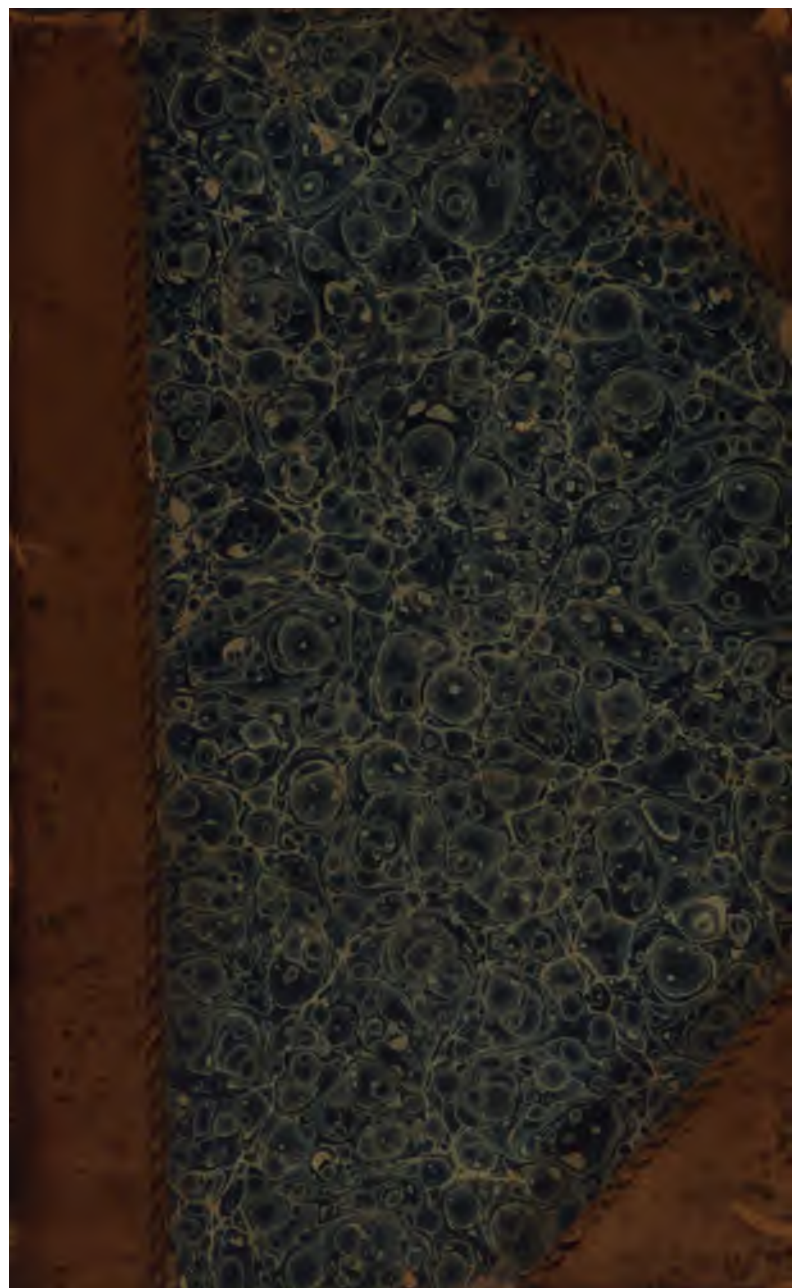
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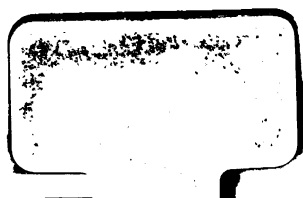
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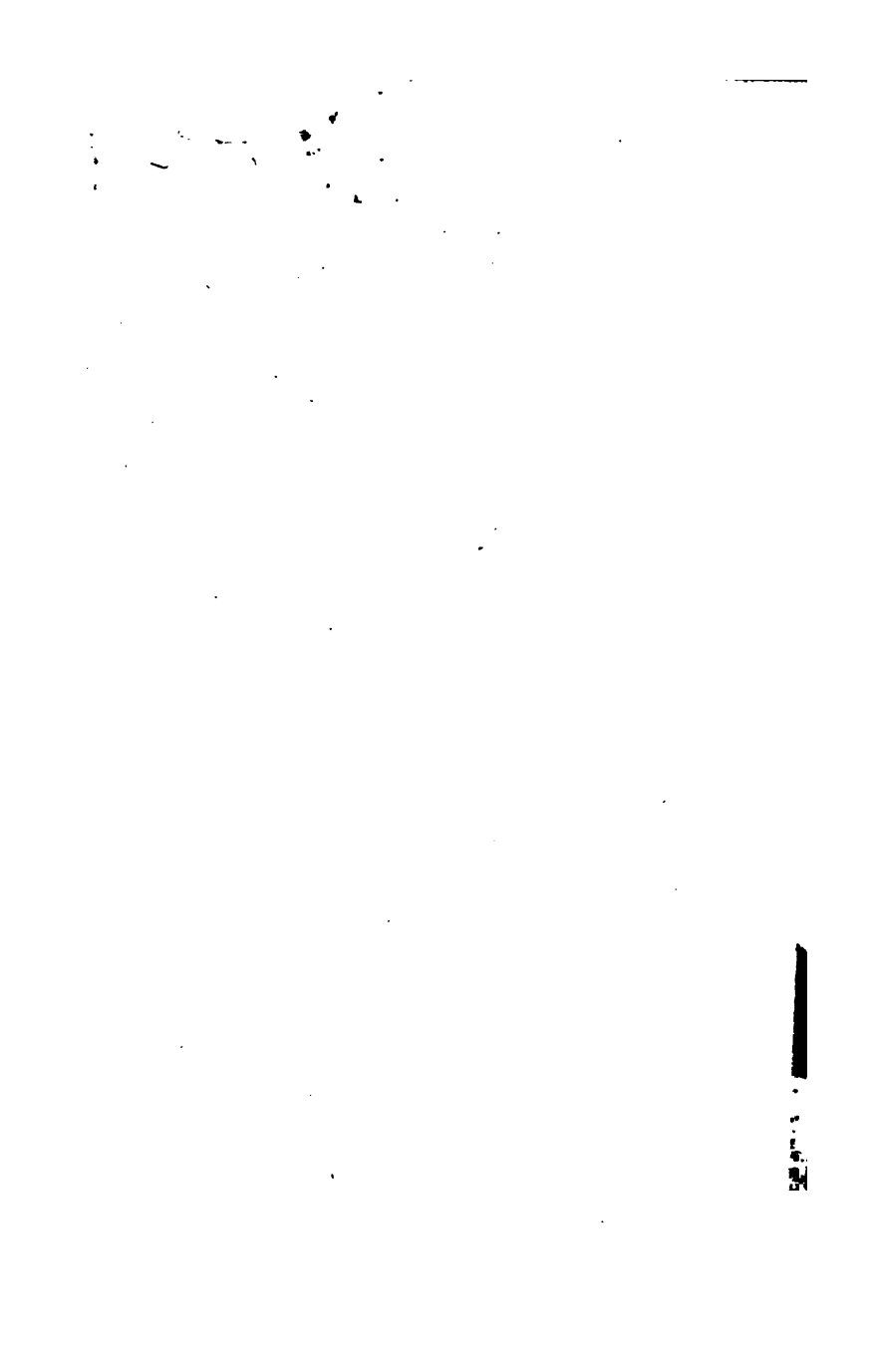
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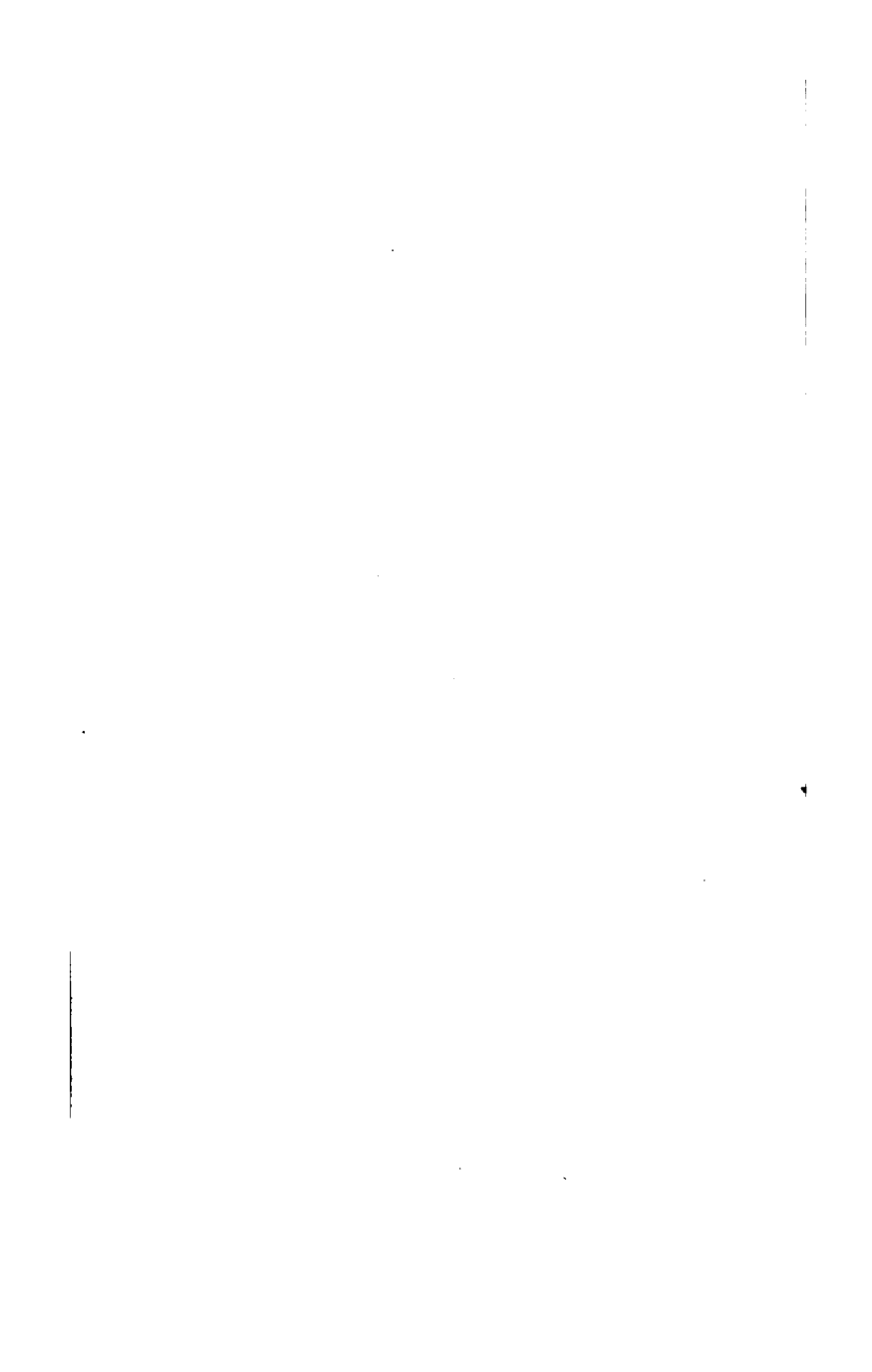
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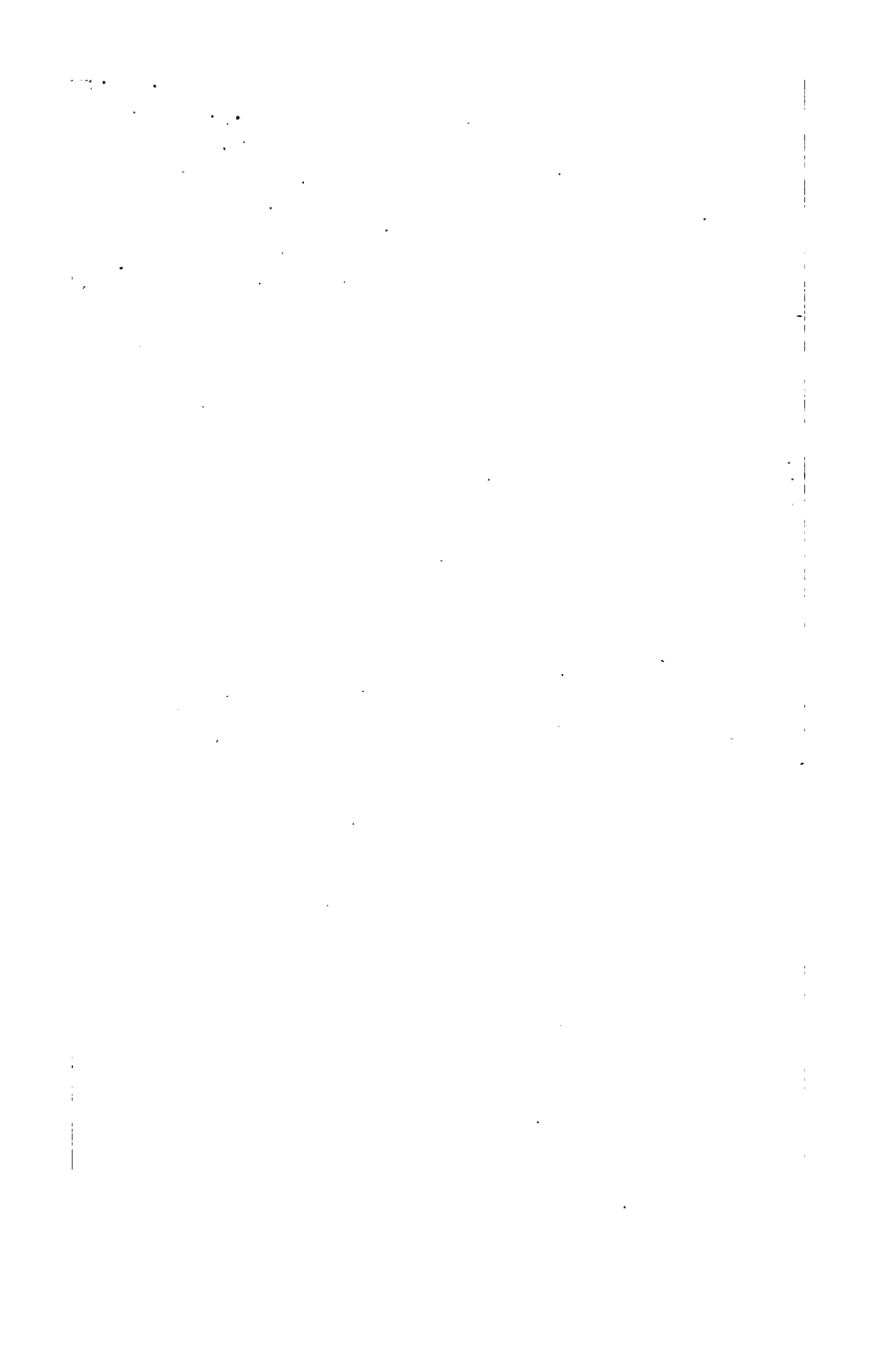
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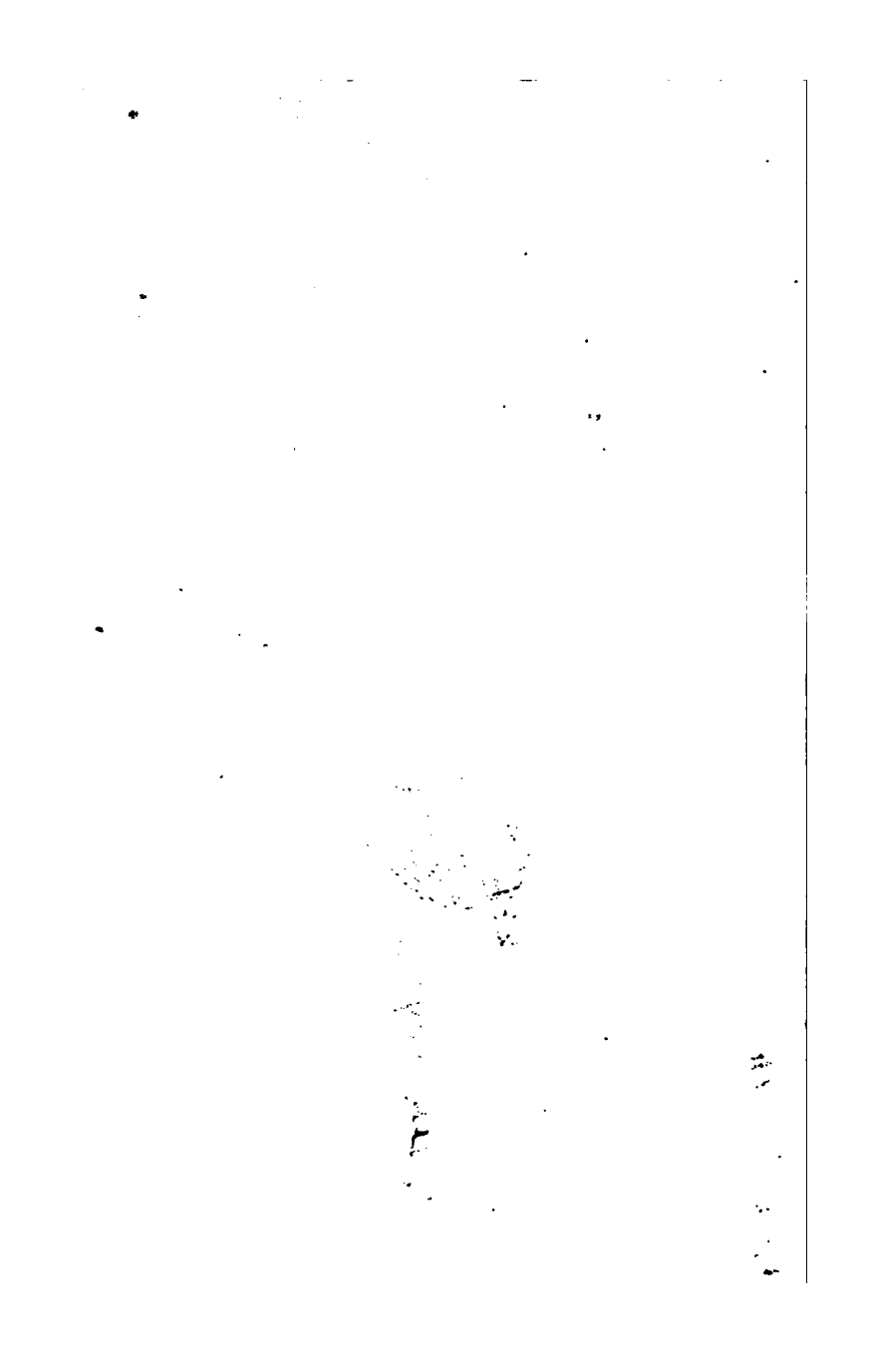




CHAMBERS'S
EDUCATIONAL COURSE.

EXEMPLARY AND INSTRUCTIVE BIOGRAPHY.

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WILLIAM AND ROBERT CHAMBERS.



EXEMPLARY AND INSTRUCTIVE

BIOGRAPHY.

FOR

THE STUDY OF YOUTH.



EDINBURGH:

WILLIAM AND ROBERT CHAMBERS;

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NOTICE.

IN Education, the study of Biography is profitable in two ways. Its least, though most obvious use, is to convey historical information in a pleasing manner. Its more important utility has a reference to the great educational principle of imitation, which, though inferior to training and exercise, has a decided advantage over precept, the advantages of which it may be said, indeed, to combine with those more properly its own. Under a conviction of these truths, it was determined that CHAMBERS'S EDUCATIONAL COURSE should involve various biographical volumes, and one especially containing a selection of the lives of those who, while generally exemplary in their private lives, had become the benefactors of their species by the still more exemplary efforts of their intellect. Such a volume, it is hoped, the present will be found. The principal persons who have advanced science and art ; the most remarkable discoverers and inventors ; those who have distinguished themselves by their humanity, their patriotism, and their successful contendings with depressing circumstances ; are here presented, in the manner which was judged most likely to stimulate others to take similar courses, and to manifest similar virtues.

EDINBURGH, November 1, 1836.

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BIOGRAPHY.

COPERNICUS, GALILEO, AND NEWTON.

THREE of the most eminent men of whom modern history gives an account, are Copernicus, Galileo, and Newton, whose extraordinary discoveries laid the foundation of that correct knowledge of the great operations of nature which now exists. The lives of these distinguished individuals abound in matter of delightful instruction, and form an appropriate commencement to a work of the present nature.

Nicholas Copernicus was born at Thorn, on the Vistula, on the 19th of February 1473, where his father, who was a Westphalian, had become a citizen ten years before. In his youth, Copernicus was a studious scholar, and at the age of twenty-three went to Italy, where the arts and sciences were beginning to flourish. At Bologna, he was instructed in astronomy; and he afterwards visited Rome, where he taught mathematics with great success. From Rome he returned to his own country, where his uncle made him a canon in the Cathedral of Frauenburg. It does not appear that he made any figure as a churchman; instead of attempting to rise in the clerical profession, he began to apply his whole mental energy to the contemplation of the sublime objects of nature.

Among the many theories with regard to our planetary system, which had been advanced during the previous two thousand years, one had at last prevailed, the most ingenious and artificial, and the most wonderful mixture of wisdom and error, which the human mind had ever conceived. The ancient philosophers, Aristotle, Plato, Archimedes, and others, had all adopted it; and from being powerfully supported by the reasoning of Aristotle, it came to be called the Aristotelian system. The leading principle in this ancient theory of the universe, and which had been originally propounded by Ptolemy, was, that the earth we inhabit was stationary or immovable, and that the sun and planets revolved round

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it. One reason for the popularity of Aristotle's theory among the learned, was, its apparent harmony with what was recognised by the senses. The earth was not *felt* to move; it *seemed* to stand still—therefore it stood still: the sun was *seen* to revolve from east to west—therefore it revolved. Such was the kind of reasoning in these ignorant times. Another cause for the acceptability of the theory was, that it appeared to be countenanced by the Scriptures, although it is very certain that the inspired writers are silent with regard to these scientific matters, the Bible being bestowed on man for very different purposes. Nevertheless, such was not the opinion of the church previous to the Reformation, and the immovability of the earth, strange to say, was reckoned a point of faith.

The Aristotelian planetary system thus continued unopposed by any other till the sixteenth century, when it was doomed to be completely overturned by the discoveries of Copernicus and Galileo. Studying diligently this difficult subject, Copernicus made the signal discovery that the sun was the centre of our planetary system; that the earth was a planet like Mars and Venus; and that all the planets revolve round the sun in the following order:—Mercury, in 87 days; Venus, in 224; the Earth, in 365; Mars, in 1 year and 321 days; Jupiter, in 11 years; and Saturn, in 29 years. Thus was discovered the true system of the universe. Thus Copernicus stands, as it were, upon the boundary line of a new era. All that he accomplished was done, moreover, a hundred years before the invention of telescopes, with miserable wooden instruments, on which the lines were often only marked with ink. As the system of Copernicus was calculated to be of immense benefit to mankind, one would naturally suppose that such a great man would have been duly rewarded for his beneficent labours. But the very reverse was the case. Though very modest in his assumptions, he drew upon himself the vengeance of the church, which looked with horror on the idea of the earth being a moving body. The Vatican, or court of the Pope at Rome, issued a sentence of excommunication against him; and he died in the seventy-first year of his age, worn out with the exercise of constantly examining the heavenly bodies, and depressed by the persecution which had visited his innocent and useful recreations. In the year 1821, the church of Rome had the good sense to obliterate from its records the sentence against Copernicus, after a lapse of 278 years from the period of its being issued.

Copernicus being removed from the field, and his theory denounced as heretical, it was fondly imagined that no new

person would arise to disturb the ancient system of the universe taught at the various colleges. But it will be comprehended by our young readers that TRUTH cannot easily be suppressed, or for a long time. It always comes out at last, let people do what they will to prevent it. Copernicus had not been dead many years, when a similar disturber of popular error arose in the person of Galileo Galilei, or more commonly called by the single name Galileo. This Italian was born at Pisa in 1564. His father, a nobleman of Florence, caused him to be instructed in the ancient languages, drawing, and music, and he very early showed a strong inclination to mechanical labours. In 1581, he entered the university of Pisa, to attend lectures on medicine, and to be grounded in the Aristotelian philosophy. This philosophy, now loaded with scholastic rubbish, very speedily disgusted Galileo, and he afterwards became its declared adversary. In 1589, he was made Professor of Mathematics in the university of Pisa, and now began to assert the laws of nature against a perverted philosophy. In the presence of numerous spectators, he performed a series of experiments on the tower of the cathedral, to show that weight has no influence on falling bodies. By this means he excited the opposition of the adherents of Aristotle to such a degree, that, after two years, he was forced to resign his professorship. Driven from Pisa, he retired into private life; but his genius being appreciated in another part of Italy, he was, in 1592, appointed Professor of Mathematics at Padua. He lectured here with unparalleled success. Scholars from the most distant regions of Europe crowded round him. He delivered his lectures in the Italian language instead of Latin, which was considered a daring improvement. From 1597 till 1610, he made a number of discoveries in mathematical science, as well as with respect to the character and phases of the planets. His name growing celebrated, he was, in 1610, appointed grand-ducal mathematician and philosopher by Cosmo II., and he removed from Padua to Florence. Here he gained a decisive victory for the Copernican system, by the discovery of the varying phases of Mercury, Venus, and Mars; and the motion of these planets about the sun, and their dependence on it for light, were thus established beyond the possibility of doubt.

While Galileo was thus employed in supporting and enlarging the field of natural philosophy, a tremendous storm was gathering about his head. He had openly declared himself in favour of the Copernican system in a work which he wrote on the sun's spots, and was therefore denounced as a heretic.

The monks preached against him, and he went to Rome, where he succeeded in appeasing his enemies, by declaring that he would maintain his system no further, either by words or writings. He would hardly, however, have escaped the cruelties of the Inquisition, unless the Grand-Duke of Florence, suspecting his danger, had recalled him. The promise which Galileo had given not to promulgate his opinions, he found great difficulty in keeping. Panting to make known to the world a complete account of the system of Copernicus, yet dreading the prejudices of his enemies, he fell upon the expedient of writing a work, in which, without giving his own opinion, he introduces three persons in a dialogue, of whom the first defends the Copernican system, the second the Ptolemaean (or that of Aristotle), and the third weighs the reasons of both in such a way, that the subject seems problematical, though it is impossible to mistake the preponderance of arguments in favour of Copernicus. With this great work, which is still held in reverence, Galileo went to Rome in 1630, in the sixty-sixth year of his age, and, by an extraordinary stretch of favour, received permission to print it. Scarcely had it appeared at Rome and Florence, when it was attacked by the disciples of Aristotle, and most violently of all by the teacher of philosophy at Pisa. The Pope also, instigated by some interested parties, now became the persecutor of Galileo. A congregation of cardinals, monks, and mathematicians, was appointed to examine his work, which they unhesitatingly condemned as highly dangerous, and summoned him before the tribunal of the Inquisition. This blow fell heavily on the head of Galileo, now an old man, and left defenceless by the death of his friend and patron Cosmo II. He was compelled to go to Rome in the winter of 1633, and was immediately immured in a cell in one of the prisons of the Inquisition. It is not consistent with our inclination or our plan to say one word in contempt of any religious or civil institution; yet we may certainly be pardoned in here dropping a tear of sympathy over the hard fate of this unfortunate veteran of science. Here was a poor old man, who had devoted a whole lifetime to simple scientific study, harming no one, but rather toiling for the benefit of his race, confined by a set of inexorable persecutors, ignorant judges, in a miserable dungeon in one of the most frightful of all prisons, and denied all chance of release except by a recantation of what is now acknowledged to be undoubted truth. Can we picture to ourselves this venerable philosopher contemplating the starry heavens through the gratings of his narrow window? Can we imagine his feelings in tracing the moon in its path across the hemisphere of night, and reasoning

on the accuracy of the system he had developed? Or can we think of him turning, almost broken-hearted, from this vision of his favourite pursuit, and sitting down in dismal darkness, inwardly lamenting his cruel fate, and the ignorance which thus rewarded his exertions?

Galileo remained a prisoner in the cells of the Inquisition several months, when, being brought before an assembly of his judges, he was condemned to renounce, kneeling before them, with his hand upon the gospels, what were called the "sinful and detestable errors and heresies" which he had maintained. The firmness of Galileo gave way at this critical moment of his life: he pronounced the recantation. But at the moment he rose, indignant at having sworn in violation of his solid conviction, he exclaimed, stamping his foot, *E pur si muove*—it still moves! Upon this dreadful relapse into heresy, he was sentenced to imprisonment in the Inquisition for life, and every week for three years was to repeat the seven penitential psalms; his Dialogues were also prohibited, and his system utterly condemned. Although Galileo was in this manner sentenced to confinement, it appeared to those who judged him that he would not be able, from his age, to endure such a severe punishment, and they mercifully banished him to a particular spot near Florence.

Here Galileo lived for several years, employing his time in the study of mechanics and other branches of natural philosophy. He was at this time afflicted with a disease in his eyes, one of which was wholly blind, and the other almost useless, when in 1637 he discovered the libration of the moon. Blindness, deafness, want of sleep, and pain in his limbs, united to embitter his declining years; still his mind was active. "In my darkness," he writes in the year 1638, "I muse now upon this object of nature, and now upon that, and find it impossible to soothe my restless head, however much I wish it. This perpetual action of mind deprives me almost wholly of sleep." In this condition, and affected by a slowly consuming fever, he expired in January 1642, in the 78th year of his age. His relics were deposited in the church of Santa Croce, at Florence, where posterity did justice to his memory, by erecting a splendid monument, in 1737.

The year in which Galileo died, was that in which Isaac Newton was born. This eminent individual, who was destined to establish the truth of the discoveries of his illustrious predecessors, Copernicus and Galileo, was born on the 25th of December 1642, at Colstersworth, in Lincolnshire, where his father cultivated his own moderate paternal property. After receiving the rudiments of education, under the superintendence of

his mother, he was sent, at the age of twelve, to the grammar school at Grantham, where the bias of his early genius was shown by a skill in mechanical contrivances, which excited no small admiration. Whilst other boys were at play, his leisure hours were employed in forming working models of mills and machinery; he constructed a water clock from an old box, which had an index moved by a piece of wood sinking as the drops fell from the bottom, and a regular dial-plate to indicate the hours.

On his removal from school, it was intended that he should follow the profession of a farmer; but his utter unfitness for the laborious toils of the life of an agriculturist was soon manifested. He was frequently found reading under a tree when he should have been inspecting cattle, or superintending labourers; and when he was sent to dispose of farming produce at Grantham market, he was occupied in solving mathematical problems, in a garret or hay-loft, whilst the business was transacted by an old servant who had accompanied him to town. These strong indications of the bias of his disposition were not neglected by his anxious mother; she sent him again for a few months to school, and on the 5th of June 1660, he was admitted a student of Trinity College, Cambridge.

The combination of industry and talents, with an amiable disposition and unassuming manners, naturally attracted the notice of his tutors, and the friendship of his admiring companions; amongst these was Isaac Barrow, afterwards justly celebrated as a preacher and a mathematician. Saunderson's *Logic*, Kepler's *Optics*, and the *Arithmetic of Infinites*, by Wallis, were the books first studied by Newton at Cambridge. He read the *Geometry of Descartes* diligently, and looked into the subject of judicial astrology, which then engaged some attention. He read little of Euclid, and is said to have regretted, in a subsequent part of his life, that he had not studied the old mathematicians more deeply.

Newton, while pursuing his studies at Cambridge, engaged his attention with a subject in natural philosophy, hitherto misunderstood, namely, light. It was the opinion of the celebrated philosopher Descartes, that light is caused by a certain motion or undulation of a very thin elastic medium, which he supposed pervaded space. Newton overturned this theory. Taking a piece of glass with angular sides, called a prism, he caused the sun to shine upon it through a small hole in the shutter of a darkened apartment. By this experiment, he found that the light, in passing through the glass, was so refracted or broken as to exhibit on the wall an image of seven different tints or colours; and after varying his experiments.

in a most ingenious way, he established the very interesting facts that light is composed of rays resolvable into particles, that every ray of white light consists of seven primary and differently coloured rays, each of which seven is more or less refrangible than the other. This remarkable discovery served as the foundation of much subsequent elucidation, in respect of the science of optics and the properties of light and colours.

In 1665, the students of the University of Cambridge were suddenly dispersed by the breaking out of a pestilential disorder in the place. Newton retired for safety to his paternal estate; and though he lost for a time the advantages of public libraries and literary conversation, he rendered the years of his retreat a memorable era in his own existence, and in the history of science, by another of his great discoveries, that of the theory of gravitation, or the tendency of bodies towards the centre of our globe. One day, while sitting in his garden, he happened to see an apple fall from a tree, and immediately began to consider the general laws which must regulate all falling bodies. Resuming the subject afterwards, he found that the same cause which made the apple fall to the ground, retained the moon and planets in their orbits, and regulated, with a simplicity and power truly wonderful, the motions of all the heavenly bodies. In this manner was discovered the principle of gravitation, by a knowledge of which the science of astronomy is rendered comparatively perfect.

On his return to Cambridge in 1667, he was elected Fellow of Trinity College, and two years afterwards he was appointed Professor of Mathematics in the place of his friend Dr Barrow, who resigned. His great discoveries in the science of optics formed for some time the principal subject of his lectures, and his new theory of light and colours was explained, with a clearness arising from perfect knowledge, to the satisfaction of a crowded and admiring audience. He was elected a Fellow of the Royal Society in 1671, and is reputed to have been compelled to apply for a dispensation from the usual payment of one shilling weekly, which is contributed by each member towards the expenses. He had at this period of his life no income except what he derived from his college and his professorship, the produce of his estate being absorbed in supporting his mother and her family. His personal wishes were so moderate, that he never could regret the want of money, except inasmuch as it limited his purchases of books and scientific instruments, and restricted his power of relieving the distress of others. About the year 1683, he composed his great work, the *Principia*, or *Mathematical Principles of Natural Philosophy*. In 1688, the memorable year

of the Revolution, he was chosen to represent the University in Parliament, and the honour thus conferred on him was repeated in 1701. His great merit at last attracted the notice of those who had it in their power to bestow substantial rewards, and he was appointed Warden of the Mint, an office for which his patient and accurate investigations singularly fitted him, and which he held with general approbation till his death. Honours and emoluments now flowed fast upon him. Leibnitz, having felt envious of the discoveries of Newton, tried to revenge himself by sending over a problem, which he thought would show his superiority, by baffling the skill of the English mathematicians: it was received by Newton in the evening, after his usual day's labour at the Mint, and he solved it before he retired to rest. After this there was no further attempt made to traduce his fame. In 1705, he received the honour of knighthood from Queen Anne.

Newton's benevolence of disposition led him to perform all the minor duties of social life with great exactness; he paid and received frequent visits; he assumed no superiority in his conversation; he was candid, cheerful, and affable; his society was therefore much sought, and he submitted to intrusions on his valuable time without a murmur; but by early rising, and by a methodical distribution of his hours, he found leisure to study and compose, and every moment which he could command he passed with a pen in his hand and a book before him. He was generous and charitable—one of his maxims being, *that those who gave nothing before death, never, in fact, gave at all*—a sentiment which ought to fall as a solemn admonition on the ears of those miserable-minded men who bequeath their property for such purposes as may purchase a character for philanthropy after death. His wonderful faculties were very little impaired, even in extreme old age; and his cheerful disposition, combined with temperance and a constitution naturally sound, preserved him from the usual infirmities of life. He was of middle size, with a figure inclining to plumpness; his eyes were animated, piercing, and intelligent; the general expression of his countenance was full of life and kindness; his sight was preserved to the last, and his hair in the decline of his days was white as snow. The severe trial of bodily suffering was reserved for the last stage of his existence, and he supported it with characteristic resignation. On the 20th of March 1726, he expired at the advanced age of eighty-four years.

The character of Newton cannot be delineated and discussed like that of ordinary men; its unity is so beautiful, that the biographer dwells upon it with delight, and the inquiry, by

what means he attained an undisputed superiority over his fellow-creatures, must be both interesting and useful. Newton was endowed with talents of the highest order, but those who are less eminently gifted may study his life with advantage, and derive instruction from every part of his career. With a power of intellect almost divine, he demonstrated the motions of the planets, the orbits of the comets, and the cause of the tides of the ocean; he investigated, with complete success, the properties of light and colours, which no man before had even suspected; he was the diligent, sagacious, faithful interpreter of nature, while his researches all tended to illustrate the power, wisdom, and goodness of the Creator. Notwithstanding, also, his reach of understanding and knowledge, his modesty was such, that he thought nothing of his own acquirements; and he left behind him the celebrated saying, "that he appeared to himself as only a child picking up pebbles from the shore, while the great ocean of truth lay unexplored before him."

COLUMBUS.

CHRISTOPHER COLON—better known by his Latinised surname Columbus—was born at Genoa, a sea-port of Italy, in 1436. He was the eldest son of a poor wool-carder, and in his early years, may himself, with his brothers, have worked at the trade of his father. His means of education were of course limited; but it is known that at an early age he had made some progress in the study of mathematics and the Latin language. While a youth, he was very fond of reading all works upon geography, and directed his attention entirely to those branches of learning which would be of use to him in the pursuits to which he had already determined to devote his life. He spent a short time at the college of Padua, where he acquired a knowledge of astronomy and other sciences most necessary to seamen, and particularly useful at a time when so little progress had been made in the arts of navigation.

Columbus left the university of Padua when he was about fourteen years of age. Of the events which immediately followed, we have no accurate information. It is only known that he began life in the humble capacity of a sailor boy, on board one of the Genoese vessels which sailed in the Mediterranean, and from which station he rose by his ability to be commander of a vessel. Subsequently, about the year 1470,

he visited Lisbon, the capital of Portugal; and while here, he married a young lady of the name of Palestrello, the daughter of an Italian who had been on several voyages of discovery under Prince Henry of Portugal. From her Columbus obtained the journals and charts which had been drawn up by her father on his various voyages, and frequent narrations of interesting incidents that occurred in them. He made inquiries about the voyages of the Portuguese along the coast of Guinea, in Africa, and delighted to converse with the sailors who had been there. At this period there was no knowledge of any land farther westward than Madeira, the Canaries, and Cape Verde, with the islands of that name, all lying off the west coast of Africa, and in the track of vessels sailing from Europe to India by the Cape of Good Hope. The Atlantic, within the eastern verge of which these islands lie, was supposed by mariners to be a boundless ocean to the west, or that it was limited only by Japan, India, and other portions of the Asiatic continent. By pondering on the figure of the globe, and reasoning from conjecture, Columbus became convinced, that if vessels were to sail westward on the Atlantic, islands would certainly be found in that direction, or that India might be reached much more easily by that route than by sailing thither eastward by the Cape of Good Hope. While his mind was occupied by these reflections, he became naturalised in Portugal, and made several voyages to Guinea and the Canaries, by which he improved himself in navigation. When residing at home, as we are told, he supported his family, including his father and younger brothers, by drawing maps and charts. He also lived very temperately, was plain in his dress, and rigorously observant of his religious duties.

As soon as Columbus had completely formed his opinions regarding the discovery of land in the Atlantic, he considered it necessary to put himself under the patronage of some European power, which should furnish him with a vessel or vessels, and all other requisite means for making good the discovery. It would be very painful to recite minutely the steps he took on this occasion. He applied first to the Portuguese monarch, John II., by whom he was used exceedingly ill. Offended with the little faith with which he had been treated, he in the year 1484 privately departed from Portugal with his son Diego; his wife having been some time dead. Before leaving Portugal, he sent to his brother Bartholomew to make proposals to the King of England, Henry VII., but Bartholomew was unfortunately captured by pirates on the way to England, which he did not reach till the propositions of Columbus had been accepted by another power.

On leaving Portugal, Columbus betook himself to Spain, with the intention of laying his plans before Ferdinand and Isabella, who at that time governed the united Spanish kingdoms of Castile and Arragon. Columbus arrived at Palos, a small sea-port in Spain, towards the end of the year 1485, and, as it would appear, in a somewhat destitute condition. About half a league from Palos there was a convent of Franciscan friars. Columbus, with his little son, stopped one day at this convent, to ask for some bread and water. The prior of the monastery, Juan Perez de Marchena, was a man of intelligence and learning. Being struck with the appearance and demeanour of Columbus, he immediately entered into a conversation with him. It ended in an invitation to the stranger to become for a while a guest at the convent. Juan Perez talked with Columbus of his plans, and became exceedingly interested in them. He sent for a scientific friend, Garcia Fernandez, the physician of Palos, with whom the matter was industriously examined. All became more and more zealous in their wishes and hopes for putting the project into execution. It happened that Juan Perez was an intimate friend of Fernando de Talavera, the confessor of Queen Isabella. Columbus being furnished with a letter of introduction to Talavera, in which his enterprise was strenuously recommended to the patronage of the crown, he left his son at the convent with his friend, and departed for the court of Castile, in the spring of 1486.

On arriving at Cordova, where the court at that time was residing, he found it almost impossible to obtain a hearing. This he at length accomplished; but it was long before he could make a sufficient impression on Ferdinand or his queen in order to second his views. They referred his suit to a body of learned professors, who laughed at his project, which they declared to be irreligious and impious.

Tired with waiting on the pleasure of the court of Spain, and receiving a letter of encouragement from the court of France, Columbus departed on a journey to Paris, taking in his way the friendly convent at Palos, where he had left his son under the care of Juan Perez. When his old friend the prior saw Columbus once more at the gate of his monastery, after several years of vain solicitation at court, he was deeply affected. He entreated him by all means to remain in the country. He had been father confessor to the queen, and thought he might still exercise an influence over her mind. He accordingly proceeded to Santa Fé, where the sovereigns were in person superintending the siege of the capital of Granada. Perez obtained a ready access to the queen. He laid before

her the propositions of Columbus with freedom and eloquence. Isabella was moved with the grandeur of the project. The principles upon which it was founded, the advantages that would result from its success, and the glory it would shed upon Spain, were for the first time represented to her in their true colours. She promised her patronage to the undertaking.

It was now only necessary to agree upon the terms. Columbus would listen only to princely conditions. A meaner spirit, after years of unsuccessful toil, poverty, and disappointment, would have been glad to secure the assistance of the sovereigns, on such arrangements as their own liberality might dictate. But Columbus proposed his own rewards and honours, and would consent to no other. He demanded them as if he were already successful, and aware of the extent and importance of his discoveries. The court were eventually obliged to grant that he should be admiral on the ocean, and enjoy all the privileges and honours allowed to the high admiral of Castile; that he should be governor over all the countries he might discover; and that he should reserve to himself one-tenth of all pearls, precious stones, gold, silver, and articles of merchandise, in whatever manner obtained, within his admiralty. They also allowed that he should appoint judges in all parts of Spain trading to those countries; and that on this voyage, and at all other times, he should contribute an eighth part of the expense, and receive an eighth part of the profits. These articles of agreement were signed by Ferdinand and Isabella, at the city of Santa Fé, on the 17th of April 1492. Three caravels, or very small vessels, little better than decked boats, were procured at Palos, and orders given that they should be manned and provided with all care and diligence. There were still difficulties before commencing the voyage, which it required all the perseverance of Columbus to overcome. It was almost impossible to prevail upon any seamen to engage in the undertaking. The royal order in respect to the fitting out of the caravels was peremptory; but weeks passed, and it still remained without any thing being done. The old sailors who had passed most of their lives upon the water, shrunk from the enterprise with horror. It shocked all the notions that had been entertained so long in respect to the formation of the earth, and the extent of the ocean. New orders were issued by the court, and officers were appointed to press ships and seamen into the service of Columbus. This measure occasioned a great deal of disputing and confusion, but led to no important result. At length a rich and adventurous navigator, named Alonzo Pinzon, came forward, and interested himself very strenuously

in the expedition. His assistance was effectual. He owned vessels, and had many seamen in his employ, and consequently possessed great influence. He and his brother Vicente Pinzon determined to take commands, and sail with Columbus. Their example had a great effect; they persuaded their relations and friends to embark with them, and the vessels were ready for sea within a month after they had thus engaged in their equipment.

We now find Columbus on the eve of his first grand expedition, which was to result in the discovery of the American continent and islands. The simple seaman of Genoa, whom the ignorant derided as a fool, and philosophers neglected as an impostor, after years of poverty and disappointment, had at length obtained the object of his unwearied solicitations, and was going forward with a calm and dignified assurance of success. What unspeakable joy must have filled his heart, as the little caravel in which he sailed was leaving the shores of Spain in the distance, stretching forward into that dim and unexplored ocean, from whose shadows he was to reveal new dominions for his country, and a new world for Europe!

Columbus and his companions sailed from the bar of Saltes, a small island in front of the town of Huelva, early on the morning of the 3d of August 1492. They directed their course in a south-westerly direction for the Canary Islands. These they reached; and after spending some time in repairing a damage in one of the vessels, and taking in fresh supplies of wood, water, and meat, set sail from the harbour of Gomera on the 6th of September. They steered their course directly west. In a few days they began to fall in with what Columbus considered signs of land; such as quantities of green weeds, a live crab, flocks of birds, and so forth; but all these signs of land continually failed, and the crews were daily more and more disposed to murmur against the admiral. The whole of the sailors in the little fleet were a set of cowardly wretches, who had by turns to be flattered and threatened with punishment, to keep them from open rebellion. Provisions at length were falling short, and some of the men proposed to throw Columbus into the sea, and give out on their return that he had accidentally fallen overboard.

The first land that Columbus expected to meet was Cipango, which had been placed by geographers at the eastern extremity of India. This was the name given to the island now called Japan, by Marco Polo, the celebrated Venetian traveller. The most extravagant accounts of the riches of this country were given by the writers of that age, and the admiral was anxious to proceed directly thither. At sunrise on

Sunday the 7th of October, the *Nina*, which had out sailed the other vessels, on account of her swiftness, hoisted a flag at her mast-head, and fired a gun as a signal of having discovered land. There had been a reward promised by the king and queen to the man who should first make this discovery, and each of the vessels was striving very eagerly to get ahead, and obtain the promised recompense. As they found nothing of the land the *Nina* had made signals for, the admiral shifted his course, about evening, towards the west-south-west, with a determination to sail two days in that direction. The reason for making this change was from watching the flight of the birds. The Portuguese had discovered most of their islands in this manner, and Columbus noticed that the flocks which passed them all flew from the north to the south-west. He inferred from this that land was situated in that quarter. After sailing a day or two, they found the air as soft as that of Seville, in April, and so fragrant that it was delicious to breathe it. The weeds appeared very fresh, and many land birds were taken. The men, however, had lost all faith in any signs of land. They did not cease to murmur and complain. The admiral encouraged them in the best manner he could, representing the riches they were about to acquire, and adding, that it was to no purpose to complain; for, having come so far, they had nothing to do but to continue, till, by the assistance of heaven, they should arrive at the Indies.

On the 11th of October, they met with signs of land that could not be mistaken, and all began to regain spirits and confidence. The crew of the *Pinta* saw a cane and a log. They also picked up a stick which appeared to have been carved with an iron instrument, a small board, and abundance of weeds that had been newly washed from the banks. The crew of the *Nina* saw other similar signs, and found, besides, a branch of a thorn full of red berries. Convinced by these tokens of the neighbourhood of land, Columbus, after evening prayers, made an address to his crew, reminding them of the mercy of God in bringing them so long a voyage with such fair weather, and encouraging them by signs that were every day plainer and plainer. He repeated the instructions he had given at the Canary Islands, that when they had sailed seven hundred leagues to the westward without discovering land, they should lie by from midnight till daybreak. He told them that, as they had strong hopes of finding land that night, every one should watch in his place; and besides the thirty crowns a-year which the Spanish sovereigns had promised to the first discoverer, he would give him a velvet doublet.

About ten o'clock that evening, while Columbus was keep-

ing an anxious look-out from the top of the cabin, he thought he beheld a light glimmering at a great distance. Fearing that his hopes might deceive him, he called two of his companions to confirm him. One of them came in season to observe it, but the other was too late. It had disappeared. From this they supposed it might be the torch of some fisherman, raised up and then suddenly dropped again. They were all confident of being near land. About two o'clock in the morning, the Pinta gave the signal of land, which was first perceived by a sailor named Rodrigo de Triana.

When the day appeared, they perceived before them a large island, quite level, full of green trees and delicious waters, and to all appearance thickly inhabited. Numbers of the people immediately collected together, and ran down to the shore. They were very much astonished at the sight of the ships, which they believed to be living creatures. The ships immediately came to anchor. The admiral went ashore in his boat, well armed, and bearing the royal standard. The other captains each took a banner of the Green Cross, containing the initials of the names of the king and queen on each side, and a crown over each letter. The admiral called upon the two captains, and the rest of the crew who landed, to bear witness that he took possession of that island for his sovereigns. They all gave thanks to God, kneeling upon the shore, shedding tears of joy for the great mercy received. The admiral rose, and called the island San Salvador. The Indians called it Guanahani, and it is now called Cat Island. It belongs to that group called the Bahamas.

Many of the natives came down to witness this ceremony. They were very peaceable and quiet people, and the admiral gave them some red caps, glass beads, and a few other trifles of small value, with which they were very much delighted. They imagined that the strangers had descended from heaven, and valued the slightest token they could receive from them, as of immense worth. When the admiral and his companions returned to their vessels, the natives followed them in large numbers. Some swam; others went in their canoes, carrying parrots, spun cotton, javelins, and other articles, to exchange for hawks' bells and strings of beads. They went entirely naked, seeming to be very poor and simple.

In the morning, Columbus sailed along the coast of the island towards the north-west, and in his voyage discovered other islands, to which he gave names. The largest he fell in with was Cuba, which is nearly as large as Great Britain. At Cuba he expected to find a great trade, abundance of gold and spices, large ships, and rich merchants. He inferred that this

must be the island of Cipango, of which Marco Polo had said so many marvellous things. In these conjectures he was entirely mistaken. On the 5th of December, he discovered and landed upon another large island, which he called Hispaniola, now named St Domingo or Hayti. Here he planted a fort, and made it the seat of a colony. From this period may be dated the commencement of the misfortunes of Columbus. That great man now lost control over his wicked and rapacious companions, who seemed desirous of plundering the newly discovered islands, and afterwards of sailing home, to be the first to make known the discoveries that had been made. Pinzon, the commander of the Pinta, took the lead in these dastardly proceedings, for which he afterwards expressed the deepest regret.

After cruising about for some time, and endeavouring to enter into friendly alliances with native chiefs in the islands, he set sail with his vessels on his return to Spain. His homeward voyage was exceedingly stormy; and after braving the most imminent dangers, they came in sight of land near Lisbon, on the 4th of March 1493. Having paid his respects, in passing, to the Portuguese monarch, he proceeded without loss of time towards the coast of Spain; and on the 15th of March, he entered and anchored in the harbour of Palos. The joy and confusion excited in Palos by the arrival of Columbus may be easily imagined. He was every where received with shouts and acclamations, and such honours as were usually paid to sovereigns.

After the first expressions of joy and admiration, Columbus departed for Seville. From this place he sent a message to Barcelona, where the king and queen at that time resided, to lay before them a brief account of his voyage, and to receive from them an indication of their royal will. His reception at Barcelona was particularly gratifying. He made a sort of triumphal entry, surrounded by knights and nobles, who emulated each other in their efforts to swell his praises. He was received publicly by the sovereigns, in a splendid saloon, seated on the throne, and encircled by a magnificent court. On his entrance, they rose to greet him, and would hardly allow him to kiss their hands, considering it too unworthy a mark of vassalage. Columbus then gave an account of his discoveries, and exhibited the different articles which he had brought home with him. He described the quantity of spices, the promise of gold, the fertility of the soil, the delicious climate, the never-fading verdure of the trees, the brilliant plumage of the birds, in the new regions which his own enterprise had acquired for his sovereigns. He then drew their

attention to six natives of the New World, whom he had brought, and who were present, and described their manners and dispositions. He exhibited their dresses and ornaments, their rude utensils, their feeble arms, which corresponded with his description of them, as naked and ignorant barbarians. To this he added, that he had observed no traces of idolatry or superstition among them, and that they all seemed to be convinced of the existence of a Supreme Being. The conclusion of his speech was in these words: "That God had reserved for the Spanish monarchs, not only all the treasures of the New World, but a still greater treasure, of inestimable value, in the infinite number of souls destined to be brought over into the bosom of the Christian church."

After he had finished his address, the whole assembly fell upon their knees, while an anthem was chanted by the choir of the royal chapel. With songs of praise, the glory was given to God for the discovery of a New World. Columbus and his adventures were for many days the wonder and delight of the people and the court. The sovereigns admitted the admiral to their audience at all hours, and loaded him with every mark of favour and distinction. Men of the highest rank were proud of the honour of his company.

All matters were soon prepared for the second expedition to the New World. On the dawn of the 26th of September 1493, the Bay of Cadiz was crowded with the departing fleet of Columbus. There were three large ships and fourteen caravels waiting for the signal to sail. All on board were breathing hope and joy. Instead of the gloomy despondency that overshadowed the leave-taking at Palos, there was now animation and cheerfulness. The whole fleet was under way before the rising of the sun, sailing joyfully, under a serene sky, through the tranquil waters.

During this second voyage, Columbus extended his discoveries, though without reaping any solid advantage to himself. He found the fort which he had planted entirely destroyed, and the men whom he had left slain, their avaricious and quarrelsome disposition having led to their extirpation by the enraged natives. A new colony under better auspices was, however, settled, and the payment of a tribute by the natives enforced. In the meantime, the disaffected and worthless among his companions carried groundless complaints against him to the court of Spain, and he returned to obtain reparation of the injurious imputations. On appearing before his sovereigns, he was soothed by some trifling apologies, and dispatched on a third voyage in May 1498, and in this expedition he landed on the coast of Paria, in South America.

He found the lately discovered islands distracted with the horrors of civil discord. The vices of the settlers he had left had produced misery and despair, and the unfortunate Columbus was loudly accused of being the cause of the universal ruin. His enemies in Spain had likewise the influence to induce the dispatch of a commissioner, one Bovadilla, to Hispaniola, to inquire into the truth of the charges against Columbus, and to supersede his administration. The consequence of this harsh procedure was, that Columbus, with his brothers Diego and Bartholomew, after being treated with the utmost indignity, were sent to Spain in chains.

The rumour was no sooner circulated at Cadiz and Seville that Columbus and his brothers had arrived, loaded with chains, and condemned to death, than it gave rise to an immediate expression of public indignation. The excitement was strong and universal, and messengers were immediately dispatched to convey the intelligence to Ferdinand and Isabella. The sovereigns were moved by this exhibition of popular feeling, and were offended that their name and authority should have been used to sanction such dishonourable violence. They gave orders for the immediate liberation of the prisoners, and for their being escorted to Granada with the respect and honour they deserved. They annulled all the processes against them, without examination, and promised an ample punishment for all their wrongs. He was not, however, restored to his command at Hispaniola, nor was it till many months afterwards that he was placed at the head of an expedition to open a new passage to the East Indies. On the 9th of May 1502, Columbus again set sail from Cadiz on a fourth voyage of discovery. During this voyage he touched at some parts of the South American continent, and also at some of the formerly discovered islands; but he failed in making any important discoveries, in consequence of the bad state of his vessels, which were old and unfit for sailing. With a squadron reduced to a single vessel, he now returned to Spain, where he heard with regret of the death of his patron Isabella. This was a sad blow to his expectations of redress and remuneration. Ferdinand was jealous and ungrateful. He was weary of a man who had conferred so much glory on his kingdom, and unwilling to repay him with the honours and privileges his extraordinary services so richly merited. Columbus, therefore, sank into obscurity, and was reduced to such straitened circumstances, that, according to his own account, he had no place to repair to except an inn, and very frequently had not wherewithal to pay his reckoning. Disgusted and mortified by the base conduct of Ferdinand, and exhausted with the

hardships which he had suffered, and oppressed with infirmities, Columbus ended his life at Valladolid, on the 20th of May 1506. He died with a composure of mind suitable to the magnanimity which distinguished his character, and with sentiments of piety becoming that supreme respect for religion, which he manifested in every occurrence of his life.

The monument erected by Ferdinand to his memory bears this inscription :—

“ Por Castilla y por Leon
Nuevo mundo hallo Colon.”

Which may be thus translated :—

“ For Castile and Leon Columbus found a New World.”

The discoveries of Columbus laid open a knowledge of what are now termed the West India islands, and a small portion of the South American continent, which this great navigator, till the day of his death, believed to be a part of Asia or India. In about ten years after his decease, the real character of America and its islands became known to European navigators ; and by a casual circumstance, one of these adventurers, *Amerigo Vesputii*, a Florentine, had the honour of conferring the name *America* upon a division of the globe, which in justice ought to have been called after the unfortunate Columbus.

JOHN GUTTENBERG.

JOHN GUTTENBERG, to whom the honour is due of having invented the art of printing, was born at Mayence, or Mentz, in Germany, in the year 1400. Of the early part of his life nothing is now known. There is reason to suppose, however, that he possessed a genius for mechanical pursuits, and was not deficient in the elements of literature, as his professional avocations sufficiently testify. Up till the period in which he appeared, printing was unknown. All books were written and circulated on a limited scale in manuscript, and were sold at immensely high prices. The Chinese, from early times, had used carved stamps to impress upon paper instead of writing ; the Romans likewise used stamps and seals in order to produce impressions ; but the idea of forming individual letters or characters, capable of being arranged in every kind of combination, does not appear to have occurred to any of the ancient nations, and was left to be first thought of by

the ingenious Guttenberg, in the early part of the fifteenth century.

Having struck out the grand idea of forming letters or types, wherewith to produce any given number of impressions, and upon any subject, he kept the discovery a profound secret, and removed to Strasburg about the year 1424. Unfortunately for Guttenberg, he was poor, and unable, by his own efforts, to render his discovery practically beneficial. By this means he was led into many difficulties, and in some measure robbed of the merit of his invention. In 1435, he entered into partnership with Andrew Drozhennia, or Dritzehen, John Riff, and Andrew Heelman, citizens of Strasburg, binding himself thereby to disclose certain important secrets connected with the art of printing, by which they should attain opulence. The workshop was in the house of Dritzehen, who dying shortly after the work was commenced, Guttenberg immediately sent his servant, Lawrence Beildich, to Nicholas, the brother of the deceased, and requested that no person might be admitted into the workshop, lest the secret should be discovered, and the forms (or fastened-together types) stolen. But they had already disappeared; and this fraud, as well as the claims of Nicholas Dritzehen to succeed to his brother's share, produced a lawsuit among the surviving partners. Five witnesses were examined; and from the evidence of Beildich, Guttenberg's servant, it was incontrovertibly proved that Guttenberg was the first who practised the art of printing with moveable types, and that, on the death of Andrew Dritzehen, he had expressly ordered the forms to be broken up, and the characters dispersed, lest any one should discover his secret. The result of this lawsuit, which occurred in 1439, was a dissolution of partnership; and Guttenberg, after having exhausted his means in the effort, proceeded, in 1445-6, to his native city of Mentz, where he resumed his typographic labours.

Being ambitious of making his extraordinary invention known, and of value to himself, but being at the same time deficient in the means, he opened his mind to a wealthy goldsmith and worker in precious metals, named John Fust or Faust, and prevailed on him to advance large sums of money, in order to make further and more complete trials of the art. Guttenberg being thus associated with Fust, the first regular printing establishment was begun, and the business of printing carried on in a style corresponding to the infancy of the art. After many smaller essays in trying the capabilities of his press and moveable types, Guttenberg had the hardihood to attempt an edition of the Bible, which he succeeded in print-

ing complete, between the years 1450 and 1455. This celebrated Bible, which was the first important specimen of the art of printing, and which, judging from what it has led to, we should certainly esteem as the most extraordinary and praiseworthy of human productions, was executed with cut-metal types, on six hundred and thirty-seven leaves; and, from a copy still in existence in the Royal Library of Berlin, some of them appear to have been printed on vellum. The work was printed in the Latin language.

The execution of this the first printed Bible, which has justly conferred undying honours on the illustrious Guttenberg, was, most unfortunately, the immediate cause of his ruin. The expenses incident to carrying on a fatiguing and elaborate process of workmanship, for a period of five years, being much more considerable than what were originally contemplated by Fust, he instituted a suit against poor Guttenberg, who, in consequence of the decision against him, was obliged to pay interest, and also a part of the capital that had been advanced. This suit was followed by a dissolution of partnership; and the whole of Guttenberg's apparatus fell into the hands of John Fust, who, from being the ostensible agent in the business of printing, and from the wonder expressed by the vulgar in seeing printed sheets, soon acquired the name of a magician, or one in compact with the devil; and under this character, with the appellation of Dr Faustus, he has for ages enjoyed an evil notoriety.

Besides the above-mentioned Bible, some other specimens of the work of Guttenberg have been discovered to be in existence. One in particular, which is worthy of notice, was found some years ago among a bundle of old papers in the archives of Mayence. It is an almanack for the year 1457, which served as wrapper for a register of accounts that year. This, says Hansard, would most likely be printed towards the close of 1456, and may consequently be deemed the most ancient specimen of typographic printing extant, with a *certain* date. That Guttenberg was a person of refined taste in the execution of his works, is sufficiently obvious. Adopting a very ancient custom, common in the written copies of the Scriptures and the missals of the church, he used a large ornamental letter at the commencement of books and chapters, finely embellished, and surrounded with a variety of figures as in a frame. The initial letter of the first psalm thus forms a beautiful specimen of the art of printing in its early progress. It is richly ornamented with foliage, flowers, a bird, and a greyhound, and is still more beautiful from being printed in a pale blue colour, while the embellishments are red, and of a transparent

appearance. What became of Guttenberg immediately after the unsuccessful termination of his lawsuit with Fust, is not well known. Like the discoverer of the great Western Continent, he seems to have retired almost broken-hearted from the world, and to have spent most of the remainder of his days in obscurity. It is ascertained, however, that in the year 1465 he received an annual pension from the Elector Adolphus, but that he only enjoyed this small compensation for his extraordinary invention during three years, and died in the month of February 1468.

It long formed a subject of contention amongst antiquaries and bibliomaniacs, by what means Guttenberg formed his types, but it is now pretty clearly ascertained that they were at first all individually cut by the hand. The mode of *casting* types in moulds has been very generally, and with apparent truth, assigned to Guttenberg's successor, Schœffer. This individual was an industrious young man of inventive genius, an apprentice with Fust, who took him into partnership immediately after his rupture with Guttenberg, and who is supposed to have been initiated into the mysteries of the art by the latter. The first joint publication of Fust and Schœffer was a beautiful edition of the Psalms, which came out only about eighteen months after their going into partnership. Along with it appeared a declaration by them, claiming the merit of inventing the cut-metal types with which it was printed; but this pretension was evidently false; and, in fact, it afterwards appeared that the book had been four years in the press, and must consequently have been chiefly executed by Guttenberg. It is worthy of notice that the above publication was the very first to which the date, printer's name, and place of publication, were affixed.

To Schœffer, however, as said before, must be awarded the honour of completing Guttenberg's invention, by discovering the method of casting the characters in a *matrix*. In an account of Schœffer, given by Jo. Frid. Faustus of Aschaffenburg, from papers preserved in his family, we are informed that the artist privately prepared matrices for the whole alphabet; and when he showed his master (Fust) the letters cast from them, he was so well pleased that he gave his daughter Christina to him in marriage. Fust and Schœffer concealed the new improvement, by administering an oath of secrecy to all whom they entrusted, till the year 1462, when, by the dispersion of their servants into different countries at the sacking of Mentz, by the Archbishop Adolphus, the invention was publicly divulged, and the art was spread throughout Europe.

WILLIAM CAXTON.

CONCERNING the period and mode of introduction of the art of printing into England, little is known, but it is certain that it took place not long after its invention at Mentz. By many it is believed and affirmed to have been some time in the decade of 1450, during the reign of the unfortunate Henry VI. It is now generally understood among antiquaries that printing was first performed in England by a person called Corsellis, whose press was established at Oxford. The works printed by Corsellis, are, however, allowed to have been produced from cut wooden letters, and little doubt is entertained that the first printer in Britain who used metal types cast from moulds, was William Caxton, the subject of the present memoir.

William Caxton was born in the Weald of Kent, about the year 1412. At this period, learning of all kinds was in a much more depressed state in England than in most of the continental countries, in consequence principally of the civil war in which the nation was embroiled, the habits of restlessness thus produced, and the constant pre-occupation of the time and thoughts of men in promoting the cause they espoused, and in protecting their lives and property. Under these circumstances, the most plain and common education was often neglected. Caxton's parents, however, performed their duty to him. "I am bounden," says he, "to pray for my father and mother, that in my youth sent me to school, by which, by the sufferance of God, I get my living, I hope truly." When he was about fifteen or sixteen, he was put apprentice to William Large, a mercer of London, and afterwards mayor. The name *merc*er was given at the time to general merchants trading in all kinds of goods. After he had served his apprenticeship, Caxton took up his freedom in the Mercers' Company, and became a citizen of London. Some subsequent years he spent in travelling in various countries on the Continent of Europe. In 1464, he was appointed ambassador to the court of the Duke of Burgundy. During his residence in the Low Countries, he acquired or perfected his knowledge of the French language, gained some knowledge of Flemish or Dutch, imbibed a taste for literature and romance, and, at great expense, made himself master of the art of printing. About 1472, Caxton returned to England, and introduced the art of printing in an improved form into that country. The common opinion is, that the "Game of Chess"

was the first book printed by Caxton, though Mr Dibdin thinks that the "Romance of Jason" was printed before it. Caxton was most indefatigable in cultivating his art. Besides the labour necessarily attached to his press, he translated not fewer than five thousand closely printed folio pages, though well stricken in years. The productions of his press amount to sixty-four. In 1480, he published his Chronicle, and his Description of Britain, which is usually subjoined to it. These were very popular, having been reprinted four times in this century, and seven times in the sixteenth century.

Caxton seems to have been much puzzled and perplexed about the language he should use in his translations; for, while some advised him to use old and homely terms, others, "honest and great clerks," he adds, "have been with me, and desired me to write the most curious terms that I could find; and thus, betwixt plain, rude, and curious, I stand abashed."

Among the books which Caxton published, were two editions of Chaucer's Tales. He seems to have had a veneration for the memory of this poet, and to have formed, with sound judgment and good taste, a most correct and precise estimate of the peculiar merits of his poetry. As a proof of the former, we may mention, that Caxton, at his own expense, procured a long epitaph to be written in honour of Chaucer, which was hung on a pillar near the poet's grave, in Westminster Abbey.

Caxton died in 1490-1, and was buried in St Margaret's Church, to which he bequeathed a number of books.

FRANCIS BACON.

THIS illustrious philosopher was the son of Sir Nicholas Bacon, lord-keeper of the great seal, and Anne, daughter of Sir Anthony Cook, tutor to Edward VI., and was born in London, January 22, 1561. The sprightliness of mind which he displayed in boyhood caused Queen Elizabeth to converse with him frequently, and to style him her young lord-keeper. In 1573, he was entered a student at Trinity College, Cambridge, where the progress of his intellect was so very rapid, that, before completing his sixteenth year, he had satisfied himself of the futility of that Aristotelian philosophy which had bewil-dered the human intellect for centuries, and which he was destined to supplant by the true philosophy since pursued with so much advantage to mankind. At this period of his life, he was placed under the charge of Sir Amias Powlet, the queen's

ambassador in France, where he gathered a vast quantity of facts useful to an English statesman, which he formed, before his nineteenth year, into a Treatise on the State of Europe. The unexpected death of his father having obliged him to choose a profession, he adopted that of the law, and studied it with great assiduity at Gray's Inn, but without neglecting philosophical pursuits. It was here that, at the age of twenty-six, he formed the first sketch of his great work, "The Instauration of the Sciences."

His first preferment was to the post of counsel extraordinary to the queen, which brought him rather honour than profit. His contracted circumstances leaving him no other choice than between virtuous poverty and the dependence of a courtier, he was so unfortunate as to choose the latter. He was at first an adherent of the Earl of Essex, who used every exertion to obtain his advancement, but was thwarted at every step by the secretary Cecil. Afterwards, when Essex lost the favour of the queen, and became a rebel against her authority, Bacon, in whom the selfishness of ambition had deadened every better principle, consented not only to plead against him, but disclosed some confidential letters, which went a great way to prove his guilt. Against such unworthy and heartless conduct, this period of his life only presents some rather spirited appearances which he made in the House of Commons, in behalf of the popular rights.

Till the accession of King James, Bacon made little advance either in reputation or in fortune. His learning having recommended him to the king, he was knighted, and appointed king's counsel, with a salary of forty pounds a-year. In consideration of the merit of his work "On the Advancement of Learning," published in 1605, he was appointed, two years after, to the post of solicitor-general; and about this time his practice as a lawyer became both extensive and profitable. If Bacon had been content to wait upon fortune, he could have hardly failed, with the first abilities of his time, to reach, without discredit, the highest honours of the state. But the eagerness of his ambition, joined to a certain softness and facility of disposition, by which he was disabled, as it were, for the entertainment of high and manly principle, caused him to seek elevation by means which have stamped his name with infamy. Not only was he content to present an almost impious kind of flattery to his weak sovereign, but he stooped to become the minion of a minion, namely, Villiers Duke of Buckingham, who had been recently raised from obscurity to the highest court honours, merely on account of his possessing a handsome person. By such means, and by writing to the king a letter

studiously depreciating all the other great lawyers of his day, he obtained, in March 1617, the appointment of lord-keeper, and, two years after, that of lord chancellor, with the title of Baron Verulam, subsequently exchanged for that of Viscount of St Alban's.

Without apparently gaining much personal esteem, Bacon had at this time obtained the highest reputation as a philosophical writer. To the *Proficiency and Advancement of Learning*, published in 1605, and afterwards republished in an extended form, was added, in 1620, the *Novum Organum*, which was designed as a second part of his grand work, the *Instauration of the Sciences*. Another portion, intended to complete the work, was never produced. The objects of the whole work were, to answer the objections made to the progress of knowledge, to classify the branches of knowledge, and to explain a new method of employing the faculties for the increase of knowledge; namely, to ascertain facts in the first place, and then to reason upon them towards conclusions—a mode which may now appear very obvious, and even unavoidable, but which was nevertheless unknown till explained by him. To come to particulars, Bacon tells us,

“I. That the ultimate aim of philosophical investigation is to bring the course of events, as much as possible, under our own control, in order that we may turn it to our own advantage.

II. That as each event depends upon a certain combination of circumstances which precede it, and constitute its cause, it is evident we shall be able to command the event, whenever we have it in our power to produce that combination of circumstances out of the means which nature has placed within our reach.

III. That the means of producing many events which we little dream of, are actually placed within our reach; and that nothing prevents us from using those means, but our inability to select them from the crowd of other circumstances by which they are disguised and surrounded.

IV. That therefore we should endeavour, by diligent observation, to find out what circumstances are essential, and what extraneous, to the production of each event; and its real cause being stripped free from all the perplexing concomitants which occur in nature, we shall perceive at once whether we can command the circumstances that compose it or not. This, in short, is to generalise; and having done so, we shall sometimes discover that objects, which of all others appeared the most useless, remote, and inapplicable to our purpose, possess the very properties we are in search of. Nature stands ready

to minister to our designs, if we have only the sagacity to disentangle its operations from one another, to refer each event to its real source, and to trace the powers and qualities of objects into their most abstract form.

In pursuing the dictates of this noble philosophy, man is no longer impotent and ridiculous. He calmly vanquishes the barriers which oppose his wishes—he eludes the causes of pain—he widens the range of enjoyments, and, at the same time, feels the dignity of intellect, which, like a magician's talisman, has made all things bow before his feet.

To this extraordinary individual we are indebted also for an attempt to reduce the chaos of literature into some degree of order; and to show that, notwithstanding the multiplicity and variety of books, there are only three different objects, to one or other of which the contents of every book must apply. According to Lord Bacon, human knowledge is resolvable into history, philosophy, and poetry. By history, is meant a statement of particular events which have occurred in past time. By philosophy, is meant the knowledge of general facts, concerning the relation of one phenomenon to another. By poetry, is meant an assemblage of ideas brought together for the purpose of exciting emotion.

Lord Bacon's Essays are by no means the least part of his philosophy. Wisdom has never appeared in a garb so closely adapted to her person. Every subject is treated with a clear and luminous brevity, which places the propositions side by side, without any intermediate ornament. A florid discourse may astonish us, but it is a simple one like this which enables us to arrive at conclusions.* These essays are the most popular of his writings, being devoted to subjects and involving thoughts which, as he says of them himself, "come home to men's business and bosoms." They often unite the most profound philosophy with the most fanciful illustration and poetical language, and sometimes display an almost scriptural pathos, as in the following beautiful passage:—

"The parts and signs of goodness are many. If a man may be gracious and courteous to strangers, it shows he is a citizen of the world, and that his heart is no island cut off from other lands, but a continent that joins to them. If he be compassionate towards the afflictions of others, it shows that his heart is like a noble tree that is wounded itself when it gives the balm. If he easily pardons and remits offences, it shows that his mind is planted above injuries, so that he can-

* Life of Bacon, prefixed to an Edinburgh edition of his Essays, 8vo. 1817.

not be shot. If he be thankful for small benefits, it shows that he weighs men's minds, and not their trash."

Another specimen of Bacon may be given from his praises of learning:—"Learning taketh away the wildness, barbarism, and fierceness of men's minds; though a little of it doth rather work a contrary effect. It taketh away all levity, temerity, and insolency, by copious suggestion of all doubts and difficulties, and acquainting the mind to balance reasons on both sides, and to turn back the first offers and conceits of the kind, and to accept of nothing but [what is] examined and tried. It taketh away all vain admiration of any thing, which is the root of all weakness: for all things are admired, either because they are new, or because they are great. * * * If a man meditate upon the universal frame of nature, the earth with men upon it (the divineness of souls excepted) will not seem more than an ant-hill, where some ants carry corn, and some carry their young, and some go empty, and all to and fro a little heap of dust. It taketh away or mitigateth fear of death, or adverse fortune: which is one of the greatest impediments of virtue, and imperfection of manners. * * * Virgil did excellently and profoundly couple the knowledge of causes and the conquest of all fears together. It were too long to go over the particular remedies which learning doth minister to all the diseases of the mind—sometimes purging the ill humours, sometimes opening the obstructions, sometimes helping the digestion, sometimes increasing appetite, sometimes healing the wounds and ulcerations thereof, and the like; and I will therefore conclude with the chief reason of all, which is, that it disposeth the constitution of the mind not to be fixed or settled in the defects thereof, but still to be capable and susceptible of reformation. For the unlearned man knoweth not what it is to descend into himself, and call himself to account; nor the pleasure of that *most pleasant life, which consists in our daily feeling ourselves become better*. The good parts he hath, he will learn to show to the full, and use them dexterously, but not much to increase them: the faults he hath, he will learn how to hide and colour them, but not much to amend them; like an ill mower, that mows on still and never whets his scythe. Whereas with the learned man it fares otherwise, that he doth ever intermix the correction and amendment of his mind with the use and employment thereof."

From the glories of the sage, it is our painful duty to revert to the infamy of the courtier. In his capacity of chancellor, Bacon displayed the same servility to the king and Buckingham as before, affixing the great seal to many patents which

were intended as instruments of extortion in behalf of the royal favourite. In 1621, these abuses became the subject of investigation by Parliament, when it was discovered that Bacon had also accepted bribes from suitors in the Court of Chancery. A committee of the House of Lords, appointed to inquire into the latter delinquencies, brought no fewer than twenty distinct charges against him, comprising sums which amounted to several thousand pounds; and Bacon, with his natural pusillanimity, could only meet them with an abject confession. He was sentenced to pay a fine of forty thousand pounds, to be imprisoned in the Tower during the king's pleasure, and to be for ever incapable of holding any office or employment, and never again to sit in Parliament, or to come within the verge of court.

Overwhelmed with the infamy of this sentence, he retired to solitude. During the remainder of his life, under the discouragement of public censure, a heavy burden of debt, and the still greater pressure of self-reproach, he yet retained so much vigour of intellect, and warmth of fancy, as to be capable of producing writings of singular merit, in history, morals, and philosophy. In his humiliated state, he found some comfort in comparing himself with three great men of antiquity, Demosthenes, Cicero, and Seneca, all of whom, after occupying high stations in their respective countries, had fallen into delinquency, and been banished into retirement, where they consoled themselves with letters and philosophy. These examples, he declares, confirmed him in the resolution, to which he was otherwise inclined, of devoting the remainder of his time wholly to writing. Yet even now neither philosophy nor experience had perfectly taught Bacon the lesson of moderation. After his release from the Tower, which was soon granted him, and the entire remission of his sentence which was by degrees obtained, when the king's indulgence had yielded him a pension of L.1200 a-year, in addition to the grant which he retained of L.600 a-year from the Alienation-Office, and L.700 which he derived from his own estate, he still lived at a great expense, and sometimes appeared in splendour. It is said that the Prince of Wales, one day observing, near London, a coach followed by a considerable number of people on horseback, was told, on inquiry, that it was Lord St Alban's, attended by his friends; upon which his highness said, "Well, do what we can, this man scorns to go out like a snuff." It was no inconsiderable aggravation of the folly of this prodigality, that he was still encumbered with a heavy load of debt: though, about the time of his fall, he found means to discharge arrears to the amount of eight thousand

pounds, he died in debt upwards of twenty-two thousand. Yet Bacon's greatest weakness was not so much a high opinion of himself, as an inordinate thirst for the good opinion and applause of others. With more self-esteem he might probably have been more virtuous. When the French ambassador flattered him by saying that he had never before been in the company of an angel, he remarked, "If the politeness of others compare me to an angel, my own infirmities remind me that I am a man." It was a striking proof of his self-command, that, receiving from a friend an account of the failure of an application at court for some important favour, at the moment when he was dictating to his chaplain an account of some philosophical experiments, he calmly said, "Be it so," dismissed his friend with thanks for his services, and turning to his chaplain, and saying, "Well, sir, if that business will not succeed, let us go on with this, which is in our power," continued to dictate for some hours, without hesitation of speech or apparent interruption of thought.

He pursued his philosophical researches to the last in the midst of bodily infirmities brought on by intense study, by multiplicity of business, and, above all, by anguish of mind. In his letters to the king for the remission of his sentence, he is perpetually reckoning how old he is in misery, the date being from his fall. In the winter of 1625, he found his health and spirits much impaired. In the spring of the following year, making an excursion into the country to try some experiments upon the preservation of bodies, he is supposed to have been affected by some noxious effluvia, as he was suddenly seized with pains in his head and stomach, which obliged him to stop at the Earl of Arundel's house at Highgate. Here, after a week's illness, he expired on the 9th April 1626, in the sixty-sixth year of his age. He was buried in the chapel of St Michael's church, within the precincts of Old Verulam. "When we visit his monument," says an eloquent writer, "it should be with a sacred awe, which forbids us to remember his frailties. Envy loves to whisper that he died in disgrace; but gratitude proclaims that he still lives and flourishes in the advancement of science; and when we behold around us the giant powers of nature performing whatever tasks man chooses to assign them, we may say to the departed philosopher, in the words of Shakspeare, 'Oh, St Alban's, thou art mighty yet, thy spirit walks abroad!'"

BLAISE PASCAL.

BLAISE PASCAL was born at Clermont, in Auvergne, in France, in the year 1623. His father was a judge in one of the district courts, and is reported to have been a man of considerable learning, and an able mathematician. As Blaise was his only son, so great was his affection for him, that in the year 1631 he relinquished his official situation, and settled at Paris, in order that he might himself undertake the employment of being his tutor.

From his infancy, young Pascal gave evidence of a very extraordinary capacity. He was very inquisitive, and desirous of knowing the reasons of every thing; and when good reasons were not given him, he would search for better; nor would he ever be satisfied, but by such as appeared to him to be well founded. What we are told concerning his manner of learning the mathematics, and his rapid progress in that science, is very astonishing. His father, perceiving in him an extraordinary inclination to reasoning, was afraid lest the knowledge of the mathematics should prevent him from learning the languages. He therefore resolved to keep from him, as much as he could, all notions of geometry, locked up all the books that treated of it, and refrained even from speaking of it in his presence. Yet he could not refuse to give this general answer to the importunate curiosity of his son—"Geometry is a science which teaches the way of making exact figures, and of finding out the proportions between them," but at the same time forbade him to speak or think of it any more. The slight idea which had been thus conveyed to him of the science, occupied young Blaise's thoughts, who was now only twelve years of age, and led him in his hours of recreation to make figures on the chamber-floor with charcoal, the proportions of which he sought out, laying down definitions and axioms, and then going on to demonstrations. So far had he proceeded with his inquiries, that he had come to what was just the same with the thirty-second proposition of the first book of Euclid, when he was one day surprised by his father in the midst of his figures, who asked him what he was doing. He replied, that he was searching for such a thing, which was just that proposition of Euclid. When asked afterwards how he came to think of this, he answered that it was because he had found out such another thing; and so, going backwards, he at length came to the definitions and axioms which he had formed to himself. Astonishing as it may appear, that a boy should

be capable of thus working his way into the mysteries of a science, without having seen any treatise upon the subject, or even knowing any thing of the terms; and surprising as it is that he should have, in the course of his boyish researches, hit upon exactly the same combination of figures which had been adopted by an ancient philosopher for proving a particular mathematical truth, yet we are assured of the fact by Madame Perier, Pascal's sister, and several other writers, the credit of whose testimony is unquestionable.

From this time young Pascal had full liberty to indulge his genius in mathematical pursuits, and was furnished by his father with Euclid's Elements, of which he made himself master in an incredibly short time, without any assistance. So wonderful was his proficiency in the sciences, that at the age of sixteen he wrote "A Treatise on Conic Sections," which, in the judgment of the most learned men of the time, was considered to be a great effort of genius. At the age of nineteen, our young mathematician had contrived a machine, capable of making a number of arithmetical calculations without any other assistance than the eye and the hand. This was esteemed a very wonderful thing, and would have done credit to any man versed in science, and much more to such a youth. About this time the state of his health becoming impaired, owing most probably to the intenseness of his studious application, he was obliged to suspend his labours for the space of four years. At the age of twenty-three, having seen Torricelli's experiments respecting a vacuum and the weight of the air, he directed his attention to those subjects, and made several new experiments, by which the weight of the atmosphere at different heights—a scientific fact of great moment—was fully demonstrated. The results of his investigations were immediately published, and communicated by him to all the learned bodies in Europe.

The reputation which Pascal thus acquired by his scientific labours, occasioned his being frequently consulted by some of the greatest mathematicians and philosophers of the age, who applied for his assistance in the resolution of various difficult questions and problems. Among other subjects on which his ingenuity was employed, was the solution of a problem proposed by Father Mersenne, which had baffled the penetration of all who attempted it. This problem was, to determine the curve described in the air by the nave of a coach-wheel, while the machine is in motion; which curve was then called a roulette, but is now commonly known by the name of cycloid. As a spur to genius, M. Pascal offered a reward of forty pistoles to any one who should give a satisfactory answer to it.

No person having succeeded, he published his own solution at Paris; but as he now began to grow disgusted with the sciences, he would not send it into the world under his own name, but prefixed to it that of A. D'Etonville. This exertion of his genius was a triumph over all the old mathematicians of Europe, and it was made in circumstances which cannot but excite astonishment; for we are informed that he made the discovery, as it were, in spite of himself, and to his own great surprise, while passing sleepless nights in his bed, tormented by severe paroxysms of the toothache.

When M. Pascal was in the twenty-fourth year of his age, and the highest expectations were entertained of the advantages to science from his future labours, he all at once renounced the study of the mathematics and natural philosophy, as well as all human learning, and devoted himself wholly to a life of mortification and prayer. This change in him was occasioned by his reading the books of some of those ascetic religionists who unnaturally make the height of virtue to consist in an abstinence from the enjoyment of those blessings which a kind Providence affords, and strangely consider the miseries which his creatures inflict upon themselves, to be the most acceptable sacrifice which they can offer to a benevolent Deity. Their superstitious and gloomy notions were unhappily embraced by M. Pascal, and he became as great a devotee as almost any age has produced. From this time he renounced all pleasure and all superfluity; and to this system he adhered in the illnesses to which he was frequently subject, being of a very infirm habit of body. He not only denied himself the most common gratifications, but he also took without reluctance, and even with pleasure, either as nourishment or as medicine, whatever was disagreeable to the senses; and he every day retrenched some part of his dress, food, or other things, which he considered as not absolutely necessary. He occasionally wore an iron girdle full of points next to his skin; and when any vain thought came into his mind, or he took pleasure in any circumstance, he gave himself some blows with his elbow, to increase the violence of the smart, and by that means put himself in mind of his duty. During the latter years of his life, his principal relaxation from the rigorous system which he prescribed to himself, consisted in visits which he paid to the churches where some relics were exposed, or some solemnity observed; and for that purpose he had a spiritual almanack, which informed him of the places where particular services were performed.

From being one of the most esteemed men of his age or country, Pascal now became one of the most contemptible,

and his memory in the present day can only be regarded with pity. While in this deplorable prostration of body and mind, he nevertheless showed that intellect was not dead within him; yet he exercised his faculties on a subject far below the dignity of his previous studies. He entered keenly into a quarrel betwixt two classes of monks, called Jansenists and Jesuits, taking the part of the former, and endeavouring to prove, both by railery and argument, that the Jesuits had formed a design to corrupt mankind—a design which no sect or society ever did or can hope to carry into effect. The work which Pascal wrote on this occasion was entitled "Provincial Letters;" and both from its serious tone of reasoning and its happy turns of wit, as well as from the humour and taste of the age, it obtained very extensive celebrity. This controversial production, which is now very properly forgotten, did less to establish the fame of this extraordinary man than a work which he wrote about the same period, of a devotional and moral nature, but which was not given to the world till after his decease. The manner in which this work was written is curious. While living in ascetic retirement from the world, he was in the habit of writing down stray thoughts on religious and moral subjects on the first piece of paper which he could find. After his death these bits of paper were found piled upon different pieces of string, without any order or connection; and being exactly copied as they were written, they were afterwards arranged and published under the title of "*Pensées de M. Pascal*," &c. (Thoughts of M. Pascal upon Religion and some other subjects.) These *pensées*, or thoughts, have been translated from the French into the English and various other languages, and exhibit striking traits of his sublimity of genius, beautiful turn of sentiment, as well as force and elegance of expression. They are, however, in many places irreconcilable with just and rational views of religion, and are calculated to reflect dishonour on the wisdom and benevolence of the Deity. They gave room for the sneers of Voltaire and others, and there is a likelihood that they have done more harm than good to the cause which their author so warmly but indiscreetly advocated.

Pascal was little more than thirty years of age when he was engaged in framing these controversial and devotional productions, and like most individuals who have shown an exceeding precocity of genius, he declined both in body and mind much earlier than is the ordinary lot of mankind. At thirty-six years of age he had the infirmity of a man of fourscore; but there can be little doubt that this premature decay was greatly accelerated by his mistaken notions of what constitutes true

piety and sound morals. Besides punishing himself by wearing an iron girdle full of points next his skin, he broke off all voluntary intercourse with society, changed the place of his abode, and spoke to no one, not even to his own servants, whom he hardly ever admitted into his room. He made his own bed, fetched his dinner from the kitchen, and carried back the plates and dishes in the evening; so that he employed his servants only to cook for him, to go on a few unavoidable errands, and to do such things for him as he was incapable of performing himself. Nothing was to be seen in his chamber but two or three chairs, a table, a bed, and a few books. It had no kind of ornament whatever; he had neither a carpet on the floor, nor curtains to his bed. These circumstances, however, did not prevent him from occasionally receiving visits; and when his friends appeared surprised to see him thus without furniture, he replied, that he had what was necessary, and that any thing more would be a superfluity unworthy of a wise man.

His health now rapidly declined, and his disorders so enfeebled his organs, that his reason became in some measure affected. In these circumstances he met with an accident which produced an unfavourable impression upon his imagination, not to be effaced, excepting during short intervals, by the soothing persuasions of his friends and of his confessor. In the year 1654, the state of weakness to which he was reduced having alarmed his physicians, they prescribed to him taking the air and gentle exercise. As he was one day crossing the Seine at the bridge of Neuilly, in a coach and four, the two leading horses became unmanageable at a part where the parapet was down, and plunged over the side into the river. Happily their weight broke the traces, by which means the other horses and the carriage were extricated on the brink of the precipice. The effect on the feeble and languishing frame of M. Pascal may easily be conceived. It was with great difficulty that he was recovered at all from a long swoon; and he was never reinstated in the calm possession of his mental faculties. He always imagined that he saw a deep abyss on the left side of him, and he would never sit down till a chair was placed there, to secure him from danger. He also persuaded himself that he had a kind of vision, the particulars of which he preserved in a memorandum on a piece of paper, which he always carried about him between the cloth and lining of his coat. After languishing for some years in this imbecile state of body and mind, Pascal died at Paris in 1662, when about thirty-nine years of age.

The moral which may be drawn from the life of Pascal is so obvious that it hardly requires to be pointed out. We find

here a man who inherited from nature all the powers of a versatile genius ; a geometrician of the first rank ; a profound reasoner ; an elegant writer, whose collected works extend to many large volumes ; and a person who was remarkable for the amiableness of his disposition : yet we find also a man who forsook the clear path of duty to indulge in a system of monstrous asceticism, alike repugnant to common sense and pure devotion ; and, therefore, one who was guilty of desecrating and trampling under foot those valuable faculties bestowed upon him by his Creator for a wise and beneficent purpose.

JOHN BUNYAN.

JOHN BUNYAN, the author of "The Pilgrim's Progress," was born in the year 1628, at Elstow, near Bedford, in England. His father was one of those mean workers in brass, commonly called *tinkers*, and it is not unlikely that the family was of gipsy extraction. In early youth he was put to school, and learned to read and write, but soon forgot all that he had acquired. The circumstances of his family appear to have required that he should, at an early period of life, begin to assist his father in his business. From his earliest years he had an enthusiastic and visionary turn of mind ; and though his religious knowledge was perhaps very limited, it affected him in a very peculiar manner. His sleep was haunted with dreams of devils and wicked spirits, who endeavoured to take possession of him ; and his waking moments, even in the midst of childish sports, presented him with reflections so nearly similar, that he often wished he had been a devil himself, and so have acted as the tormentor rather than the tormented. In his general conduct, he was a totally reckless young man, though exempted from drunkenness and other kinds of profligacy. In the eighteenth year of his age, he was a soldier in the parliamentary army, and was drawn out to go to the siege of Leicester : one of the same company having desired to go in his stead, Bunyan consented, and he ever accounted it a remarkable preservation, that the substitute was shot through the head, while acting as a sentinel. About this time Bunyan married, and thus, perhaps, was preserved from many profligacies into which he might otherwise have fallen. The young pair were both very poor ; not even so much as a dish or a spoon did they possess. He was able, however, to work for their bread, and his spouse happened to be a virtuous person.

Two pious books, which came by her into his possession, were the first means of impressing him with serious thoughts; but their effect was slight and temporary. A sermon he heard one Sunday against Sabbath-breaking, affected him considerably; and that afternoon, while he was pursuing the sports then customary among the English peasantry on this sacred day, he heard, as he thought, a voice from heaven, expressing the displeasure with which his ungodly practices were regarded. The sobriety which this incident produced, was soon after exchanged for his usual recklessness of behaviour. He was one day swearing dreadfully on the streets of Bedford, when a woman of by no means good character, being shocked at his expressions, reproved him as the most abandoned wretch in the whole town—a rebuke that sank so deep into his mind, as to cause him to give up profane speaking. Soon after, he began to read the Bible; and the neighbours began to observe with pleasure that his manners were undergoing improvement.

Bunyan gradually acquired religious knowledge by means of study and conversation; and at length he became a member of a small Baptist congregation which had been established at Bedford by one John Gifford, a man who, after fighting for the king, and narrowly escaping a judicial death—after living the usual profligate life of the royalist soldiers—had become a pious and estimable person, and a preacher of the gospel to others. The subject of our memoir now began to be dreadfully afflicted with doubts as to his own merit in a religious point of view, and in particular was greatly puzzled to know whether he had faith or not. To solve this difficulty, he conceived the notion of trying to perform a miracle; accordingly, one day, being between Elstow and Bedford, he resolved to say to the puddles that were in the horse-pads, “Be dry,” and to the dry places, “Be ye puddles!” Just, however, as he was about to do so, other thoughts came over him, and he determined to wait a little longer before attempting a miracle.

The first rudiments of the Pilgrim’s Progress are found in a vision of his happier fellow-worshippers, which about this time was presented to his mind. “I saw,” he says, “as if they were on the sunny side of some high mountain, there refreshing themselves with the pleasant beams of the sun, while I was shivering and shrinking in the cold, afflicted with frost, snow, and dark clouds. Methought, also, betwixt me and them, I saw a wall that did compass about this mountain. Now, through this wall my soul did greatly desire to pass; concluding, that if I could, I would even go into the very midst of them, and there also comfort myself with the heat of their sun. About this wall I thought myself to go again and

again, still prying as I went, to see if I could find some way or passage by which I might enter therein ; but none could I find for some time. At the last I saw, as it were, a narrow gap, like a little doorway in the wall, through which I attempted to pass. Now, the passage being very strait and narrow, I made many offers to get in, but all in vain, even until I was well nigh quite beat out by striving to get in. At last, with great striving, methought I at first did get in my head ; and after that, by a sideling striving, my shoulders, and my whole body ; then was I exceeding glad, went and sat down in the midst of them, and so was comforted with the light and heat of their sun."

Doubts, qualms, fears, returned upon him, notwithstanding the metaphorical assurance which this vision had conveyed to his mind. Whatever wild and wayward shadow streamed across the restless region of his thoughts, was arrested like a suspicious-looking person in a besieged city, brought to account for itself, and treated with an attention which the mere suggestion of casual fancy could hardly deserve. It is perhaps in this sense that the human heart is said in Scripture to be abominably wicked, since not only without our will, but in positive opposition to our best exertions, sinful suggestions profane the thoughts of the wisest, and foul emotions sully the hearts of the most pure. The wise and well-informed shrink with horror from the phantoms of guilt which thus intrude themselves, and pray to heaven for strength to enable them to reject such pollution from their thoughts, and for power to fix their attention upon better objects. But the dark dread of his possible exclusion from the pale of the righteous rushed ever and anon with such vivid force on the mind of the unfortunate Bunyan, as to make him accept for fatal arguments against himself, the wildest and most transitory coinage of his own fancy, while, to fill up every pause, he was tortured by the equally terrible suspicion that he was guilty of the most unpardonable of crimes.

In this wretched state, Bunyan convinced himself that his torments were the immediate infliction of the devil, and he suffered literally all the misery which he, to appearance, metaphorically describes as endured by Christian in the Valley of the Shadow of Death. He actually thought sometimes that he felt the enemy of mankind pulling him by the skirts, and desiring him to cease his prayers. Even in an age which produced the most wonderful variety of religious fervours, those of Bunyan are astonishing. After years of torture, his triumph was completed, when one day, in the Baptist place of worship, he thought he heard these words three times repeated,

"My grace is sufficient for thee." It was fortunate that he came through these dreadful hallucinations of feeling without a deranged understanding.

In 1655, on the death of Gifford, who is entitled to be considered as his "*Interpreter*," Bunyan was chosen with some others to minister to the congregation. It is to be mentioned in his favour that he undertook this task in no confident or intrusive spirit, but the reverse. It appears that a regular clergyman was soon after appointed, and Bunyan then confined himself to preaching in the surrounding villages, to those who were perfectly ignorant of religion. Amidst these duties, which were practised without interfering with his ordinary occupations, he found time to write his first work, which was an attack upon the peculiar tenets of the Quakers, then a new sect. He had previously scribbled verses on the margins of his copy of Fox's Martyrs, which is still preserved; but they were the merest doggrel. In prose, however, when he had to use the straightforward language to which he was accustomed in preaching, as well as in common life, he succeeded very well.

About this time, Bunyan lost his first wife, who left him with four children—one of them a blind daughter. He appears to have soon after taken another spouse, whose first name (Elizabeth) is alone known. Though he thus far complimented the fair sex, it is certain that he entertained no high opinion of it in general.

In his business of itinerant preaching, Bunyan liked to go to what he called "the dark places of the country," and there can be no doubt that his life was an useful one. He was destined, however, to undergo tribulation on account of his modest and gratuitous labours. While in Bedford he was generally respected as he deserved, there were not wanting individuals belonging to hostile sects, who regarded his exertions with great jealousy, and endeavoured, by slanders, to ruin his reputation. It was insinuated that he was a Jesuit in disguise—that he was a highwayman—nay, even a witch—all of which suppositions show that he had begun to exercise no small influence over his fellow-creatures.

In 1657, though the sway of Cromwell produced more toleration than usual, an indictment was preferred against him for preaching at Eaton. This attempt to silence him was defeated; but immediately upon the Restoration, when the Episcopal forms were re-established, he fell under a prosecution for preaching, and, on his avowing a fixed resolution to continue that practice, was imprisoned in Bedford jail. The dismay of his wife on this occasion caused her to fall into premature la-

hour, and gave birth to a dead child ; but Bunyan, for his own part, rejoiced in his sufferings, in the hope that they would help the cause he had espoused. He was now completely separated from his pots and kettles, and might have been in great pecuniary distress, if he had not taken up a new trade equally humble with the former—the making of tagged thread laces. His confinement was to continue till he should promise to abstain from preaching ; but, in the course of time, his jailor relaxed so far as to permit him to go abroad occasionally, to hold devotional communion among his friends. He was even allowed to pay a visit to London ; and in the last year of his captivity he was chosen minister of the Baptist congregation—which could not have taken place if he had not enjoyed a considerable share of personal liberty.

Of sixty religious tracts and pamphlets, written by Bunyan in the course of his life, it is probable that many were composed in Bedford jail. These works, however, are of so little value, that they would have now been unworthy of notice, but for his “*Pilgrim’s Progress*,” which he also wrote in prison. Of this great classic of the common people—one of the most felicitous works ever penned—no copy of the first edition is now known to exist, and the date of its publication is therefore unknown. It must have appeared, however, before 1679, as the second edition, a copy of which is in the British Museum, is dated in the preceding year.

Bunyan was now the regular minister of the Baptist congregation, and was well known both as a writer and a preacher—his fame being so great in the latter capacity, that when he preached in the metropolis, which he occasionally visited, three thousand persons would come to the little chapel in Southwark, where he was to hold forth, being a far larger number than what could gain admittance. His book, in one sense, was truly original : it was the grand effort of a powerful though unlettered genius ; and it has never been approached by any imitator. How far, however, the author was indebted for his plan, and some of the details, to preceding intellects, is not so clear. Works of this allegorical kind are not uncommon in the early part of the seventeenth century. So early as 1629, the famous Mr Zachary Boyd, minister of Glasgow, published his “*Last Battell of the Soule*,” in which such characters are introduced as Pastour, Sick Man, Spiritual Friend, Carnal Friend, Sathan, Michael, &c. A poem, entitled the *Pilgrimage*, which appeared in Whitney’s *Emblems*, accompanied by an engraving, might, it is said, have given the hint for the *Pilgrim’s Progress* ; and it is curious that in 1672 was written (though it did not appear till 1678, the date of Bunyan’s

second edition, and perhaps also of his first) a short discourse by Dr Simon Patrick, dean of Peterborough, entitled the "Parable of a Pilgrim," in which, under the semblance of directions for a journey to Jerusalem, the learned author communicates many moral and religious instructions, and even introduces various persons representing different denominations of Christian believers. Still, making every allowance for hints and ideas variously procured, the honour of having written this happy book, which combines all the vivacity and entertainment of a novel with the profoundest religious knowledge, and the most persuasive instruction, remains to John Bunyan, as one of the highest that can belong to any literary name. The work is translated into almost all civilised languages, and, though tinged in some parts with the author's peculiar tenets, is read by almost all classes of religious thinkers.

The success of the *Pilgrim's Progress* induced Bunyan to compose a second part, which, though written with equal felicity, produces upon the whole less impression on the mind of the reader. He also wrote an allegorical work, called "The Holy War made by King Shaddai upon Diabolus, for the regaining of the Metropolis of the World; or the losing and retaking of Mansoul;"—an idea bearing a still stronger resemblance, it must be acknowledged, to the dramatic poem of Mr Zachary Boyd, just alluded to.

He survived his enlargement from prison sixteen years, during which he employed himself diligently as a preacher, both in Bedford and in other places. It speaks much to his personal worth as a man, that he was indefatigable also in administering to the temporal wants of the oppressed non-conformists of those days, and in promoting brotherly kindness among the individuals over whom he had any influence. He at length died, August 12, 1688, in consequence of a cold caught during a journey which he undertook for the purpose of reconciling a father to his son, who was threatened with disinheritation. This event took place in London, and he was interred in Bunhill-fields burial-ground, where a monument has been erected to his memory.

For the following note respecting Bunyan's birthplace, we are indebted to Mr Carruthers, editor of the *Inverness Courier* :—

"I visited the spot where Bunyan was born, one day in the spring of 1826, and shall not readily forget my morning's walk, and its accompanying circumstances. The landscape was truly English, and every thing seemed joyous and animated. The trees had not yet put on their glorious garniture of leaves, but the brooks were perfectly transparent—the mea-

dows rich with verdure; and here and there a tall fir-tree shot its green spiral branches into the air, and glistening masses of ivy twined round the trunk and arms of some old oak, or completely enveloped the marshy hollies and stunted elms. Birds were singing gaily in the lanes and hedges, husbandmen were busy sowing in the fields, and schoolboys equally busy 'nesting,' or 'violetting' in all the luxury of the Easter holidays. The poor man's spot of garden ground showed its knots of spring-flowers, and its border of daisies, primroses, and crocuses, with its budding gooseberry and currant bushes, while the mistress of the cottage might be seen twirling her mop at the door in the sunshine, and thanking Providence for 'the beautiful fine weather.' The house at Elstow where Bunyan lived, and carried on his father's business of a brazier, is still pointed out to strangers. It is a low narrow building, consisting of a room and closet on the ground floor, and a bedchamber above. The front is coloured, like most of the houses in the village, with yellow ochre, and behind there is a small garden, which formerly contained the forge at which Bunyan used to work. The ceiling of the house is not plastered, and exhibits the same 'roof and rafters' that the pilgrim was wont to contemplate. Its present occupant is an aged widow, who appears to entertain a deep veneration for the memory of 'Mr Bunyan.' Many people, she said, came to see the house, and a gentleman of Bath had taken a drawing of it. The chapel at Bedford in which Bunyan preached, is designated 'Bunyan's old meeting-house;' and the arm-chair on which he used to recline after his pulpit labours, is carefully preserved in the vestry. They show the pew in Elstow church in which he used to sit, with his name cut on the boards. The church of Elstow is part of a landscape worthy the happiest aspiration of a painter or poet. The building was originally an abbey of Benedictine nuns, which was dissolved at the Reformation; and it stands on a large secluded green at the end of the village, inclosed by aged oaks and plum-trees—at the time I saw them, white with blossoms. In front of the church porch is the ruined pedestal of a sundial, and adjoining the chancel are the remains of the conventual buildings, their grey walls decorated with ivy, shrubs, and flowers. Bunyan was a stern, austere sectarian; but the recollection or the sight of the beautiful village church in which he was baptised, and whose bells he was so fond of ringing when a boy, must sometimes have been like dew to his toiling and troubled spirit, as he walked 'through the wilderness of this world.'

LINNÆUS.

CHARLES LINNÆ, better known by his Latinised name, Linnæus, was the son of a poor village pastor, and was born at Rashult, in the province of Smeland, in Sweden, in the year 1707. To great originality of genius, were joined an enthusiastic disposition, and a steadiness of perseverance, which enabled him to make his way through poverty and obscurity to a distinguished pre-eminence as a man of science and learning. An ardent love for the study of nature, especially for botanical knowledge, early took possession of him. While yet a boy, he seems to have been fonder of rambling about the fields, and perusing the great book of nature, than the folios of the schools; for so little satisfaction does he seem to have given his first teachers, that his father, dissatisfied with the reports of his progress, contemplated binding him to the trade of a shoemaker. The intervention of friends, and his own earnest entreaties, however, at last persuaded his parent to permit him to study the profession of medicine. At the university we find him rising into distinction, even in the midst of extreme poverty—in want of books—in want of clothes—in want of bread to eat—and even patching up old shoes with the bark of trees, to enable him to wander into the fields in prosecution of his favourite study of botany.

While yet a mere youth, he was pitched upon, by the Academy of Sciences of Upsal, to explore the dreary regions of Lapland, and to ascertain what natural productions they contained; and we find him embracing with ardour this laborious and solitary undertaking, with a pittance barely sufficient to defray the expenses of his journey. After his return from this scientific expedition, he commenced a course of public lectures on botany and mineralogy in the University of Upsal; he was full of the subject, and the novelty and originality of his discourses immediately drew around him a crowded audience: but envy, which too often is the malignant concomitant of rising talent, soon blasted his fair prosperity. It was discovered, that, by a law of the university, no person was entitled to give public lectures, unless he had previously taken a degree. Linnæus unfortunately had obtained no academical honours, a circumstance which involved him in a violent quarrel with Dr Rosen, the professor of medicine; fortunately, his friends interposed to soothe his resentment; and he forthwith departed from Upsal, along with some of his pupils, and made a mineralogical and botanical excursion into the province of Dalecarlia.

At Fahlun, the capital of this province, he became acquainted with Dr Moræus, the chief physician. The doctor was a kind and learned man, and had plants and flowers which excited the admiration of the young botanist; but he had a fairer flower than any which Linnæus had ever yet beheld in garden or meadow. In short, for the eldest daughter of Dr Moræus, our botanist conceived an ardent affection; his admiration was met by the young lady with a grateful attachment; and in accordance with the ardour and enthusiasm of his disposition, Linnæus solicited of the father the young lady's hand in marriage. The good doctor had conceived a liking for the young, learned, and eloquent stranger; he loved him and his pursuits, and his ingenuous bearing; but he tenderly loved his daughter also, and, more cool and considerate than the young and fond lovers, foresaw that a poor friendless young man, without any fixed profession or employment, was not likely to improve his own or his daughter's happiness by such a rash step. He therefore persuaded him to delay the match for three years; that his daughter should remain unmarried in the meantime; and if, at the end of that period, he (by the study of medicine, which he strongly recommended) was in a condition to marry, his sanction to the nuptials would be readily given.

Nothing could be more reasonable than this proposal. Linnæus summoned his philosophy to his aid. It was resolved that he should forthwith depart for Leyden, in order to obtain a degree. Before his departure, Miss Moræus brought forth her accumulated saving of pocket money, amounting to a purse of one hundred dollars, and laid it at his feet as a love-offering and unequivocal proof of her attachment. He pressed her fair hand, kissed her fervently, and, with a heart glowing with the most unbounded attachment and admiration of her generosity, he bade her farewell.

Many a poetical lover would have gone forth dreaming in reverie, writing sonnets alternately to his mistress and the moon, and ever and anon bemoaning his hard fate at the awful and interminable separation. Not so our philosopher; he went forth cheered and stimulated with the thoughts that there was one who loved him and his pursuits, and to merit whose attachment he was resolved to strain every nerve in the path of learning and distinction. At Leyden he prosecuted his studies with his wonted assiduity; attracted the notice of Dr Boerhaave, and other celebrated men of science; was appointed family physician to the burgomaster of Amsterdam; produced, during the two years he held this situation, many of his most elaborate works; and visited England and other

countries in quest of knowledge. Indeed, the extent of his labours, and his indefatigable industry during this period, is almost incredible. There was almost no department of natural science which he did not investigate, and bring within the compass of his methodical arrangements; but botany was his chief and favourite study, and in this department he raised himself a reputation which can only perish with the science itself.

In 1738, he made an excursion to Paris, and towards the end of that year returned to his native country, and settled himself as a physician at Stockholm. At first he experienced neglect; but at length being fortunate enough to prescribe successfully for a cough which troubled Queen Eleonora, he henceforth became the fashionable doctor of Stockholm, and was appointed physician to the admiralty, and botanist to the king. Having now a settled income, he married the lady of his affections five years after his first courtship. Not long afterwards he was appointed medical professor in the University of Upsal; and his former enemy, Rosen, having obtained the botanical chair of that university, an amicable adjustment was made, by which they exchanged their professorships; and Linnæus saw himself seated in the botanical chair of the university, which, from the first, had been the chief object of his ambition, and which he continued to fill with distinguished honour for a period of thirty-seven years.

Through his influence, many young naturalists were sent to explore various countries; and to his zeal in the cause of science we owe the discoveries in natural history made by Kalm, Osbeck, Hasselquist, and Loeffling. He was employed by the Queen of Sweden to describe her museum at Drottningholm, when he made a new scientific arrangement of the shells contained in it. About 1751, he published his *Philosophia Botanica*, and, in 1753, his *Species Plantarum*, containing a description of every known plant, arranged according to the sexual system. This work of Linnæus, which may be termed his greatest and most imperishable production, appeared originally in two volumes 8vo; but the edition published at Berlin, 1799-1810, is extended to ten volumes.

In 1753, this great naturalist was created a knight of the polar star, an honour never before bestowed on a literary man. In 1761, he was elevated to the rank of nobility. Literary honours were also conferred on him by scientific societies in foreign countries. In 1768, he completed the plan of his *Systema Naturæ*, which, through successive editions, had been enlarged to three octavo volumes. Linnæus acquired a moderate degree of opulence, sufficient to enable him to purchase

an estate and mansion at Hammarby, near Upsal, where he chiefly resided during the last fifteen years of his life. There he had a museum of natural history, on which he gave lectures, and to which he was constantly making additions, from the contributions of travellers and men of science in various parts of the world.

His health, during a great part of his life, enabled him to pursue his researches with vigour and activity; but in May 1774, he had an apoplectic attack, which obliged him to relinquish the most laborious part of his professorial duties, and close his literary labours. A second attack occurred in 1776, and he afterwards experienced a third; but his death did not take place till January 11, 1778. Besides his works on natural history, he published a classified *Materia Medica*, and a systematic treatise on nosology, entitled *Genera Morborum*. Few men in the history of science have shown such boldness, zeal, activity, and sagacity, as Linnæus: natural science is under unspeakable obligations to him, though the different systems established by him may be superseded by more perfect ones. Charles XIV., King of Sweden, in 1819, ordered a monument to be erected to him in his native place.

CAPTAIN COOK.

THIS meritorious individual was born at the village of Marton, not far from Whitby, a seaport on the coast of Yorkshire, on the 27th of October 1728. His parents were of an exceedingly humble rank in society: his father, who acted in the capacity of a farmer's servant, married a woman in the same sphere of life with himself; and both were noted for their honesty, sobriety, and industry—qualities that descended to their son James. Young Cook received the first rudiments of his education at Marton, where he was taught to read by the schoolmistress of the village. When he was eight years of age, his father, in consequence of his good character, obtained the situation of bailiff, or superintendant of a farm, to Thomas Scottowe, Esq. near Great Ayton, whither the family removed; and at that gentleman's expense, James was put under the tuition of a schoolmaster, who instructed him in writing, and the first principles of arithmetic and book-keeping. At this period he is said to have shown a strong genius for figures, and to have made himself remarkable for the reservedness of his disposition, and the inflexibility of his temper. During

this time he likewise followed the same servile employment as his father, as much as his tender years would permit : and thus laid the foundation of that hardness of constitution for which in after-life he was so remarkable, and which may be said to have enabled him to accomplish his adventurous career.

When about sixteen years of age, Cook was bound apprentice to a shopkeeper at Snaith, a considerable fishing town about ten miles north of Whitby ; but as he now began to evince a strong partiality for a maritime life, fostered no doubt by the situation of the place, after a year and a half's servitude he obtained a release from his engagements, and determined to follow the bent of his genius.

Accordingly, in 1746, he became an apprentice for three years with Messrs Walker, of Whitby, owners of the ship *Freelove*, a vessel constantly employed in the coal trade, on board which our navigator spent the greater part of his apprenticeship. After serving the full time to the entire satisfaction of his employers, he performed some voyages to the Baltic, in the capacity of a common sailor, till at length his masters, who had penetration to discover his talents and worth, appointed him mate, and afterwards master, of one of their ships: In this employment he continued till the commencement of hostilities between Great Britain and France in 1756, when, being in the river Thames with his vessel, and finding that press-warrants were issued, he felt a spirit that disdained to be *compelled* to serve his king, and he adopted the resolution of entering the royal navy as a volunteer ; "having a mind," as he expressed himself, "to try his fortune in that way."

Cook entered on board the *Eagle*, of sixty guns, commanded by Captain, afterwards Sir Hugh, Palliser ; and that judicious officer soon perceived the merit of this excellent seaman, and granted him every encouragement compatible with the humble station which he occupied. His friends and relatives in his native county, likewise, finding his conduct deserving their patronage, generously interfered in his behalf ; and through the influence of Mr Osbaldeston, M. P. for Scarborough, with the assistance of Captain Palliser, they at length procured him a master's warrant in the *Mercury*, and in her he soon after sailed to North America, where she joined the fleet under Sir Charles Saunders, in the memorable expedition against Quebec.

It was on this occasion that the talents of Cook were first brought into notice. During the siege, a difficult and dangerous service was to be performed. This was to take the soundings of the river St Lawrence, between the Isle of Orleans and the north shore, directly in front of the French for-

tified camp at Montmorency and Beauport, in order to enable the admiral to place ships against the enemy's batteries, and to cover the army in the grand attack which General Wolfe intended to make on the camp. Captain Palliser, in consequence of his acquaintance with Cook's skill and resolution, recommended him to the service, and he performed it in the most complete manner.

After the reduction of Quebec, Cook was appointed by Lord Colville, on the 22d of September 1759, master of the *Northumberland*, in which ship his lordship remained the following winter, as commodore, at Halifax. During the leisure which the winter season afforded him, he employed his time in the acquisition of such knowledge as eminently qualified him for his future appointments. It was at Halifax that he first read Euclid, the father of mathematics; and applied himself to the study of astronomy, and other higher branches of nautical science. The assistance which he derived from books was but scanty; but his industry enabled him to supply many wants, and to make a progress far superior to what could have been expected from the few advantages he enjoyed.

In April 1760, he received a lieutenant's commission, and he continued during two years to apply himself diligently to acquire a knowledge of the North American coast, and to facilitate its navigation. His abilities as an accurate draughtsman were now so well known, that he was employed by different commanders, particularly Lord Graves, to make charts and surveys; and the unanimous voice of the best judges confirms his merit in this respect.

Towards the close of 1762, he returned to England, and married a young lady of the name of Batts, whom he tenderly loved, and who had every claim to his warmest affection and esteem. It is a singular circumstance, if it be true as reported, that he was godfather to his future wife, and, at the very time she was christened, declared that he had determined on the union which afterwards took place between them.

Early in the year 1763, after the restoration of peace, he was appointed marine-surveyor of Newfoundland, at the recommendation of his steady friend and patron, Captain, afterwards Lord Graves, who went out again as governor. This appointment he continued to fill, under successive governors, till the close of the year 1767; and he had here an opportunity of exhibiting to the Royal Society a proof of the great progress which he had made in the study of astronomy. This he did in 1766, by making an observation of an eclipse of the sun at the Island of Newfoundland, with the longitude deduced from it, which was published in the fifty-seventh volume of the

Philosophical Transactions ; and he now acquired reputation for his scientific, as he had formerly for his professional skill.

We come now to that period of Cook's life when he was to be known to the world as one of the most illustrious navigators that any age or nation has produced. It having been calculated by astronomers that a transit of the planet Venus over the sun's disc would happen in 1769, and that the best place for observing it would be in some part of the South Seas, the Royal Society addressed a memorial to his majesty on the subject, entreating that a vessel might be ordered at the expense of government, for the conveyance of suitable persons to make the observations. To this memorial a favourable answer was returned, and the Endeavour bark, a vessel of three hundred and seventy tons, was purchased into the service for the voyage. Some difficulties occurred in the appointment of a commander ; but at length Mr Stephens, Secretary to the Admiralty, mentioned Lieutenant Cook as a person whom he judged to be fully qualified for the direction of the voyage, and at the same time recommended it to the board to take the opinion of Sir Hugh Palliser, who had lately been governor of Newfoundland, and was intimately acquainted with the merit of Cook. Sir Hugh rejoiced in the opportunity of serving his friend, and, through the strength of his recommendation, it was determined that Cook should have the command of the expedition. He was appointed joint-astronomer with Mr Charles Green, a gentleman who had long been assistant to Dr Bradley, at the Royal Observatory at Greenwich ; and he was also accompanied by Mr afterwards Sir Joseph Banks, president of the Royal Society, and by Dr Solander, a Swedish gentleman, who had made much proficiency in every branch of natural history, under the instructions of the celebrated Linnæus. With the rank of captain, he sailed down the river Thames, on the 30th of July 1768, and, on the 26th of August following, he sailed from Plymouth Sound, on an expedition the most honourable to his country.

On the 13th of November, Captain Cook arrived at Rio de Janeiro, in South America ; and proceeding thence, after touching at Port Maurice, in the Straights of Le Maire, on the 13th of April 1769, he anchored in Matavia Bay, in the Island of Otaheite.

In the course of this voyage, Captain Cook visited the Society Islands ; determined the insularity of New Zealand ; sailed through the strait which separates these two islands, now called after his name ; and made a complete survey of both. He afterwards explored the eastern coast of New Holland, hitherto unknown ; and thus added an extent of more

than two thousand miles to our geographical knowledge of the globe. On the 12th of June 1771, he came to an anchor in the Downs, after having been absent almost three years, in which time he had experienced every danger to which a voyage of such length is incident, displaying on all occasions a mind equal to the most perilous enterprises, and to the boldest and most daring efforts of navigation and discovery.

Shortly after Captain Cook's return to England, it was resolved to equip two ships to complete the discovery of the southern hemisphere. It had long been a prevailing idea that the unexplored part contained another continent, and many plausible philosophical arguments had been urged in support of this opinion. To ascertain this point was the important object of Captain Cook's second voyage. That nothing might be omitted which could tend to facilitate the enterprise, two ships were provided, equipped with uncommon care, and furnished with every necessary that could contribute to the safety, health, and comfort of the navigators. The first of these ships, commanded by Captain Cook, was called the *Resolution*, a vessel of four hundred and sixty-two tons burthen; the other, the *Adventure*, of three hundred and thirty-six tons, was commanded by Captain Tobias Furneaux.

He sailed from England on the 9th of April 1772; on the 25th of January 1774, arrived within the southern frozen zone; and on the 30th of January, he reached the latitude of $71^{\circ} 10'$ south; but all attempts to penetrate farther to the southward being found absolutely impracticable, he was obliged to relinquish the attempt. This latitude, to the extent of three degrees, has been since passed by Captain Weddell, in 1823.

Cook returned to England from this his second voyage, in July 1774, and was received with marked honours. He might now have retired from all future toil; but he was reserved for yet far greater exertions, and doomed, through savage barbarity, to lose a life of the greatest value to society. For a number of years it had been a favourite scheme with navigators to discover a shorter and more commodious passage to the East Indies than by the Cape of Good Hope. Cook's mind was fired with the magnitude of such a design, and the consequences likely to result from it. Under a noble enthusiasm, he offered his services in the conducting of the expedition; no proposal could have been more grateful, and he was invested with the command. The vessels destined for this service were the *Resolution* and the *Discovery*—the former being given to Cook, the latter to Captain Clerke. The instructions were to seek out a path from the Pacific to the Atlantic, by way of the clusters of islands Cook had before visited within the southern

tropic. The ships left the English Channel in July 1776. The particulars of this interesting voyage our readers are most likely already acquainted with. It will be remembered that Cook proceeded by way of the Cape of Good Hope, Van Dieman's Land, New Zealand, the Friendly and Society Islands, and thence northwards along the west coast of America, till he was prevented from sailing round the northern extremity of Asia by the approach of winter. He now returned southwards to the Sandwich Islands, in the Pacific, with the intention to remain till summer. But here his enterprise was arrested. When at the Island of Owhyee, a quarrel arose between the natives and the ship's crews, which led to a sort of skirmish or hurried fight. In endeavouring to quell the disturbance, when on shore, he was stabbed in the back, and fell with his face into the water. This melancholy event occurred on the 14th of February 1779. The intelligence was received, not only in Britain, but throughout Europe, with general lamentation, and various honours were justly paid to his memory, both by public bodies and private individuals.

BENJAMIN FRANKLIN.

BENJAMIN FRANKLIN was born at Boston, in New England, North America, on the 17th January 1706, and was the youngest but two of a family of seventeen children, two daughters being born after him. His ancestors, as far as they can be traced back (at least three hundred years), were petty freeholders at Eaton, in Northamptonshire; but if we may judge by the surname of the family—the ancient Norman appellation for a country gentleman—we may conclude they had originally been of some consequence. After the Reformation, the immediate progenitors of Benjamin continued zealously attached to the church of England, till towards the close of the reign of Charles II., when his father Josias, along with his uncle Benjamin, became dissenters. These men were both bred to the trade of silk-dyeing. Josias married early in life; and about the year 1682, he emigrated, with his wife and three children, to America, on account of the persecutions to which he was exposed for his dissenting principles. On arriving in New England, he embraced the occupations of soap-boiler and tallow-chandler, of which businesses he previously knew nothing, but only from their being at the time the likeliest to provide maintenance for his increasing family.

He appears to have been a man of great penetration and solid judgment; prudent, active, and frugal; and although kept in comparative poverty by the expenses of his numerous family, was held in great esteem by his townsmen.

In no respect was his practical good sense more conspicuous than in the education of his children; and his illustrious son frequently alludes, in terms of thankfulness and gratitude, to the many exemplary precepts and sound moral lessons he received while under the paternal roof. The following passage may be read with no little instruction by the heads and members of all families similarly circumstanced:—"He was fond of having at his table, as often as possible, some friends, or well-informed neighbours, capable of rational conversation; and he was always careful to introduce useful or ingenious topics of discourse, which might tend to form the minds of his children. By this means, he early attracted our attention to what was just, prudent, and beneficial in the conduct of life. He never talked of the meats which appeared on the table; never discussed whether they were well or ill dressed, of a good or bad flavour, high seasoned or otherwise, preferable or inferior to this or that dish of a similar kind. Thus accustomed, from my infancy, to the utmost inattention as to these objects, I have since been perfectly regardless of what kind of food was before me; and I pay so little attention to it even now, that it would be a hard matter for me to recollect, a few hours after I had dined, of what my dinner had consisted. When travelling, I have particularly experienced the benefit of this habit; for it has often happened to me to be in company with persons, who, having a more delicate, because a more exercised taste, have suffered in many cases considerable inconvenience, while, as to myself, I have had nothing to desire."

Benjamin was at first designed to be a clergyman, and at eight years of age was put to the grammar-school with that view, having previously been taught to read. His uncle Benjamin, who had likewise emigrated, encouraged this project. But young Franklin had not been a year at school when his father perceived that his circumstances were quite inadequate to the expenses necessary to complete his son's education for the clerical profession. He accordingly removed him from the more learned seminary, and placed him under a humble teacher of reading and writing for another twelvemonth, preparatory to binding him to some handicraft trade.

When his term at school was expired, being then ten years of age, he was taken home to assist his father in his business; but he soon testified such repugnance to the cutting of wicks

for candles, running errands, waiting in the shop, with other drudgery of the same nature, that, after a tedious and ill-borne trial of two years, his father became afraid of his running off to sea (for which he confesses to have had a predilection) as an elder brother had done, and resolved to put him to some other occupation. After much deliberation, therefore, he was sent on trial for a few days to his cousin (a son of Benjamin), who was a cutler; but that relative being desirous of a large apprentice-fee than his uncle could spare, he was recalled. His brother James, a short time previous to this period, had returned from England, whither he had been sent to learn the printing business, and set up a press and types on his own account at Boston. To him, therefore, after no little persuasion, Benjamin at last agreed to become apprentice, and he was indentured accordingly for the term of nine years; that is, until he should reach the age of twenty-one.

The choice of this profession, as it turned out, was a lucky one, and it was made after much careful and correct observation on the part of the parent. He had watched his son's increasing fondness for books, and thirst for information, and that, too, of a solid and instructive sort; and he therefore judiciously resolved to place him in a favourable situation for gratifying this propensity in the youthful mind; while he would at the same time be instructed in a profession by which he could always independently maintain himself, wherever almost his fortunes might lead him, within the bounds of the civilised world. Franklin thus speaks of his early and insatiable craving after knowledge:—

“From my earliest years I had been passionately fond of reading, and I laid out in books all the money I could procure. I was particularly pleased with accounts of voyages. My first acquisition was Bunyan's collection, in small separate volumes. These I afterwards sold, in order to buy an historical collection by R. Burton, which consisted of small cheap volumes, amounting in all to about forty or fifty. My father's little library was principally made up of books of practical and polemical theology. I read the greatest part of them. There was also among my father's books, Plutarch's Lives, in which I read continually, and I still regard as advantageously employed the time devoted to them. I found, besides, a work of De Foe's, entitled *An Essay on Projects*, from which, perhaps, I derived impressions that have since influenced some of the principal events of my life.” It seems to have been lucky for himself and mankind that the last named author's most celebrated work, *Robinson Crusoe*, did not fall into his hands at this period.

By his assiduity Franklin soon attained great proficiency in his business, and became very serviceable to his brother. At the same time, he formed acquaintance with various booksellers' apprentices, by whose furtive assistance he was enabled to extend the sphere of his reading. This gratification, however, was for the most part enjoyed at the expense of his natural rest. "How often," says he, "has it happened to me to pass the greater part of the night in reading by my bedside, when the book had been lent me in the evening, and was to be returned the next morning, lest it might be missed or wanted!" His studious habits and intelligent conversation also attracted the notice of a wealthy merchant, who was in the habit of coming about the office, who invited him to his house, and gave him the use of an excellent library.

It is a singular peculiarity of all minds of an active and aspiring character, that they uniformly endeavour to do whatever others have done, and from which they themselves have derived enjoyment or benefit. Franklin, from the delight he took in the perusal of books, at last bethought him of trying his own hand at composition; and, as has happened, we believe, with a great proportion of literary men of all ages, his first efforts were of a poetical nature. His brother having come to the knowledge of his attempts, encouraged him to proceed, thinking such a talent might prove useful in the establishment. At the suggestion of the latter, therefore, he finished two ballads, which, after being printed, he was sent round the town to sell; and one of them, the subject of which was a recent affecting shipwreck, had, he says, a prodigious run. But his father having heard of the circumstance, soon let down the pegs of the young poet's vanity, by analysing his verses before him in a most unmerciful style, and demonstrating, as Franklin says, what "wretched stuff they really were." This sharp lesson, which concluded with a warning that versifiers were almost uniformly beggars, effectually weaned him from his rhyming propensities.

Franklin immediately afterwards betook himself to the composition of prose, and the first opportunity of exercising his pen and his faculties in this way occurred in the following manner:—He had a young acquaintance of the name of Collins, who was, like himself, passionately fond of books, and with whom he had frequent and long arguments on various subjects. In narrating this circumstance, he comments, in passing, on the dangerous consequences of acquiring a disputatious habit, as tending to generate acrimony and discord in society, and often hatred betwixt the best of friends. Franklin and his companion having as usual got into an argument

one day, which was maintained on both sides with equal pertinacity, they parted without bringing it to a termination; and as they were to be separated for some time, an agreement was made that they should carry on their dispute by letter. This was accordingly done; when, after the interchange of several epistles, the whole correspondence happened to fall into the hands of Franklin's father. After perusing it with much interest, his natural acuteness and good sense enabled him to point out to his son how inferior he was to his adversary in elegance of expression, arrangement, and perspicuity. Feeling the justice of his parent's remarks, he forthwith studied most anxiously to improve his style; and the plan he adopted for this purpose is equally interesting and instructive.

"Amidst these resolves," he says, "an odd volume of the Spectator fell into my hands. This was a publication I had never seen. I bought the volume, and read it again and again. I was enchanted with it, thought the style excellent, and wished it were in my power to imitate it. With this view I selected some of the papers, made short summaries of the sense of each period, and put them for a few days aside. I then, without looking at the book, endeavoured to restore the essays to their due form, and to express each thought at length, as it was in the original, employing the most appropriate words that occurred to my mind. I afterwards compared my Spectator with the original. I perceived some faults, which I corrected; but I found that I chiefly wanted a fund of words, if I may so express myself, and a facility of recollecting and employing them, which I thought I should by that time have acquired, had I continued to make verses. The continual need of words of the same meaning, but of different lengths for the measure, and of different sounds for the rhyme, would have placed me under the necessity of seeking for a variety of synonymes, and have rendered me master of them. From this belief, I took some of the tales of the Spectator, and turned them into verse; and after a time, when I had sufficiently forgotten them, I again converted them into prose. Sometimes, also, I mingled my summaries together; and, a few weeks afterwards, endeavoured to arrange them in the best order, before I attempted to form the periods and complete the essays. This I did, with a view of acquiring method in the arrangement of my thoughts. On comparing afterwards my performance with the original, many faults were apparent, which I corrected; but I had sometimes the satisfaction to think, that, in certain particulars of little importance, I had been fortunate enough to improve the order of the thought or style; and this

encouraged me to hope that I should succeed in time in writing decently in the English language, which was one of the greatest objects of my ambition."

But it was not only by such rigorous self-imposed tasks that this extraordinary man, even at so early an age, endeavoured to chasten his mind, and make every animal propensity subservient to his sense of duty. He also began to exercise those acts of personal self-denial, which the heyday of youth, the season for animal enjoyment, feels as the most intolerable of all restrictions. Having met with a work recommending a vegetable diet, he determined to adopt it. Finding after some days' trial that he was ridiculed by his fellow boarders for his singularity, he proposed to his brother to take the half of what was now paid by that relative for his board, and therewith to maintain himself. No objection was of course made to such an arrangement, and he soon found that of what he received he was able to save one-half. "This," says he, "was a new fund for the purchase of books, and other advantages resulted to me from the plan. When my brother and his workmen left the printing-house to go to dinner, I remained behind; and dispatching my frugal meal, which frequently consisted of a biscuit only, or a slice of bread and a bunch of raisins, or a bun from the pastry-cook's, with a glass of water, I had the rest of the time till their return for study; and my progress therein was proportioned to that clearness of ideas and quickness of conception which are the fruits of temperance in eating and drinking."

Another remarkable instance of the resolute way in which he set about making himself master of whatever acquirement he found more immediately necessary to him at the moment, is the following:—Having been put to the blush one day for his ignorance in the art of calculation, which he had twice failed to learn while at school, he procured a copy of Cocker's Arithmetic, and went through it all, making himself completely master of it, before turning his mind to any thing else! He soon after, also, gained some little acquaintance with geometry, by perusing a work on navigation. He mentions, likewise, his reading about this time Locke's Essay on the Understanding, and the Art of Thinking, by Messrs du Port Royal. Having found, in some essay on rhetoric and logic, a model of disputation after the manner of Socrates, which consists in drawing on your opponent, by insidious questions, into making admissions which militate against himself, he became excessively fond of it, he says, and practised it for some years with great success, but ultimately abandoned it, perceiving that it could be made as available to the cause of wrong as

that of right, while the prime end of all argument was to convince or inform.

About three years after Franklin went to his apprenticeship, that is to say, in 1721, his brother began to print a newspaper, the second that was established in America, which he called the *New England Courant*: the one previously established was the *Boston News Letter*. The new publication brought the most of the literati of Boston about the printing-office, many of whom were contributors; and Franklin frequently overheard them conversing about the various articles that appeared in its columns, and the approbation with which particular ones were received. He became ambitious to participate in this sort of fame; and having written out a paper, in a disguised hand, he slipped it under the door of the printing-office, where it was found next morning, and submitted, as usual, to the critics when they assembled. "They read it," he says; "commented on it in my hearing; and I had the exquisite pleasure to find that it met with their approbation; and that in the various conjectures they made respecting the author, no one was mentioned who did not enjoy a high reputation in the country for talent and genius. I now supposed myself fortunate in my judges, and began to suspect that they were not such excellent writers as I had hitherto supposed them. Be this as it may, encouraged by this little adventure, I wrote and sent to press, in the same way, many other pieces which were equally approved—keeping the secret till my slender stock of information and knowledge for such performances was pretty completely exhausted." He then discovered himself, and had the satisfaction of finding he was treated with much more respect by his brother and his friends than heretofore.

The two brothers, however, lived together on very disagreeable terms, in consequence of the hasty and overbearing temper of the elder, and Benjamin anxiously longed for an opportunity of separating from him. This at last occurred. His brother was apprehended and imprisoned for some political article which offended the local government, and, upon his liberation, was prohibited from ever printing his newspaper again. It was therefore determined that it should be published in Benjamin's name, who had managed it during his brother's confinement with great spirit and ability. To avoid having it said that the elder brother was only screening himself behind one of his apprentices, Benjamin's indenture was delivered up to him discharged, and private indentures entered into for the remainder of his time. This underhand arrangement was proceeded in for several months, the paper continuing to be printed in Benjamin's name; but his brother having

one day again broke out into one of his violent fits of passion, and struck him, he availed himself of his discharged indentures, well knowing that the others would never be produced against him, and gave up his employment. Franklin afterwards regretted his having taken so unfair an advantage of his brother's situation, and regarded it as one of the first *errata* of his life. His brother felt so exasperated on the occasion, that he went round all the printing-houses, and represented Benjamin in such a light that they all refused his services.

Finding he could get no employment at Boston, as well as that he was regarded with dislike by the government, he resolved to proceed to New York, the nearest town in which there was a printing-office. To raise sufficient funds for this purpose, he sold part of his library; and having eluded the vigilance of his parents, who were opposed to his intention, he secretly got on board of a vessel, and landed at New York on the third day after sailing.

Thus, at the age of seventeen, Franklin found himself three hundred miles from his native place, from which he was in some sort a runaway, without a friend or recommendation to any one, and with very little money in his pocket. To complete his dilemma, he found, on applying, that the only printer then in the town could give him no employment. That person, however, recommended him to go to Philadelphia, where he had a son, who, he thought, would give him work; and he accordingly set off for that place. His journey was a most disastrous one both by water and land, and he frequently regretted leaving home so rashly. He reached his destination at last, however, and in a plight which certainly did not bode over auspiciously for his future fortunes. His own graphic description of his condition and appearance, on his first entrance into Philadelphia, is at once interesting and amusing:—

"I have entered into the particulars of my voyage, and shall in like manner describe my first entrance into this place, that you may be able to compare beginnings so unlikely with the figure I have since made. I was in my working dress, my best clothes being to come by sea. I was covered with dirt; my pockets were filled with shirts and stockings; I was unacquainted with a single soul in the place, and knew not where to seek a lodging. Fatigued with walking, rowing, and having passed the night without sleep, I was extremely hungry, and all my money consisted of a Dutch dollar, and about a shilling's worth of coppers, which I gave to the boatmen for my passage. At first they refused it, because I had rowed, but I insisted on them taking it. A man is sometimes more generous when he has little than when he has much money,

probably because he is, in the first place, desirous of concealing his poverty.

“I walked towards the top of the street, looking eagerly on both sides, till I came to Market Street, where I met a child with a loaf of bread. I inquired where he had bought it, and went straight to the baker’s shop which he pointed out to me. I asked for some biscuits, expecting to find such as we had at Boston; but they made, it seems, none of that sort at Philadelphia. I then asked for a threepenny loaf; they made no loaves of that price. I then desired him to let me have threepence worth of bread, of some kind or other. He gave me three large rolls. I was surprised at receiving so much. I took them, however, and having no room in my pockets, I walked on, with a roll under each arm, eating the third. In this manner I went through Market Street to Fourth Street, and passed the house of Mr Read, the father of my future wife. She was standing at the door, observed me, and thought with reason that I made a very singular and grotesque appearance. I then turned the corner, and went through Chestnut Street, eating my roll all the way; and having made this round, I found myself again on Market Street wharf, near the boat in which I arrived. I stepped into it to take a draught of the river water; and finding myself satisfied with my first roll, I gave the other two to a woman and her child who had come down the river with us in the boat, and was waiting to continue her journey. Thus refreshed, I regained the street, which was now full of well-dressed people all going the same way. I joined them, and was thus led to a Quakers’ meeting-house, near the market place. I sat down with the rest, and, after looking round me for some time, hearing nothing said, and being drowsy from my last night’s labour and want of rest, I fell into a sound sleep. In this state I continued till the assembly dispersed, when one of the congregation had the goodness to wake me. This was consequently the first house I entered, or in which I slept, in Philadelphia.”

Having with some difficulty procured a lodging for the night, he next morning waited on Mr Bradford, the printer to whom he had been directed. That individual said he had no work for him at present, but directed him to a brother in trade of the name of Keimer, who, upon application, made him the same answer; but, after considering a little, set him to put an old press to rights, being the only one indeed he possessed; and in a few days gave him regular work. Upon this, Franklin took a lodging in the house of Mr Read, his future father-in-law.

Franklin had been some months at Philadelphia, without

either writing to or hearing from home, and, as he says, trying to forget Boston as much as possible, when a brother-in-law of his, a master of a vessel, having accidentally heard where he was, wrote to him, pressing his return home in the most urgent terms. Franklin's reply, declining compliance with the request, happened to reach his brother-in-law when the latter was in the company of Sir William Keith, governor of the province, and the composition and penmanship struck him as so much superior to the ordinary style of letter-writing, that he showed it to his excellency. The governor was no less pleased with it, and expressed the utmost surprise when told the age of the writer. He observed, that he must be a young man of promising talents, and said that if he would set up business on his own account at Philadelphia, he would procure him the printing of all the public papers, and do him every other service in his power. Franklin heard nothing of this from his brother-in-law at the time; but one day, while he and Keimer were at work in the office, they observed through the window the governor and another gentleman (who proved to be Colonel French of Newcastle, in the province of Delaware), finely dressed, cross the street, and come directly for the office, where they knocked at the door. Keimer ran down, in high expectation of this being a visit to himself; "but the governor (says Franklin) inquired for me, came up stairs, and with a politeness to which I had not at all been accustomed, paid me many compliments, desired to be acquainted with me, obligingly reproached me for not having made myself known to him on my arrival in town, and wished me to accompany him to a tavern, where he and Colonel French were going to taste some excellent Madeira wine! I was, I confess, somewhat surprised, and Keimer was thunderstruck. I went, however, with the governor and Colonel French to a tavern at the corner of Third Street, where, while we were drinking the Madeira, he proposed to me to establish a printing-house. He set forth the probabilities of success, and himself and Colonel French assured me that I should have their protection and influence in obtaining the printing of the public papers for both governments; and as I appeared to doubt whether my father would assist me in this enterprise, Sir William said that he would give me a letter to him, in which he would recommend the advantages of the scheme in a light which he had no doubt would determine him to agree to do so. It was thus concluded that I should return to Boston by the first vessel, with the letter of recommendation from the governor to my father. Meanwhile, the project was to be kept secret, and I continued to work to Keimer as before.

The governor subsequently sent for me every now and then to dine with him. I considered this as a very great honour ; and I was the more sensible of it, as he conversed with me in the most affable, friendly, and familiar manner imaginable."

In pursuance of the above arrangement, Franklin set out on his return homewards, in the end of April 1724, having been absent seven months, during which time his parents and relations had heard nothing of him whatever, his brother-in-law never having written to inform them where he was. All the family, with the exception of his brother James, were delighted to see him ; and not the less so, perhaps, that he was apparelled in a complete new suit of clothes, had an excellent silver watch, and about five pounds sterling in his pocket. His father was exceedingly surprised when informed of the object of his visit, and still more at the contents of Governor Keith's epistle. After long deliberation, he came to the resolution of refusing compliance with the request, on account of his son being too young to undertake the management of such a speculation ; adding, that he thought the governor a man of little discretion in proposing it. He promised, however, when his son should attain his twenty-first year, that he would supply him with what money he required to set him up in business, praising him highly, at the same time, for his industry and good conduct. Franklin, accordingly, was necessitated to return to Philadelphia with the news of his bad success, but left Boston on this occasion accompanied by the blessings of his parents. When he arrived at Philadelphia, he immediately waited upon the governor, and communicated the result of his journey. Sir William observed that his father was "too prudent ;" but added, "since he will not do it, I will do it myself." It was ultimately arranged, therefore, that Franklin should proceed personally to London to purchase every thing necessary for the proposed establishment, for the expense of which the governor promised him a letter of credit to the extent of L. 100, with recommendations to various people of influence.

It had been arranged that Franklin was to go to England in the regular packet-ship ; and as the time of her sailing drew near, he became importunate for the governor's letters of credit and recommendation, but the latter always put him off under various pretences. At last, when the vessel was on the point of departing, he was sent on board, under the assurance that Colonel French would bring the letters to him immediately. That gentleman accordingly came on board with a packet of dispatches tied together, which were put into the captain's bag, and Franklin was informed that those intended for him were tied

up with the rest, and would be delivered to him before landing in England. When they arrived in the Thames, accordingly, the captain allowed him to search the bag, but Franklin could find no letters directed either to himself or addressed as to his care; but he selected six or seven, which from the directions on them he conceived to be those intended for his service. One of these was to the king's printer, and Franklin accordingly waited upon that gentleman with it; but the latter had no sooner opened it, than he exclaimed, "Oh, this is from Riddlesden!"—(a well-known rascally attorney at Philadelphia); I have lately discovered him to be an arrant knave, and wish to have nothing to do either with him or his letters." So saying, he turned on his heel, and resumed his occupation. In short, it turned out that none of the letters were from the governor; and he soon learned from a gentleman of the name of Denham, who had been a fellow-passenger with him, and to whom he explained his awkward situation, that the governor was a complete cheat, deceiving people, from vanity and a love of self-consequence, with promises which he neither intended nor was able to fulfil; and laughed at the idea of a man giving a letter of credit for £.100 who had no credit for himself.

Franklin's situation was now even more desolate than when set ashore, ragged, hungry, and almost penniless, at Philadelphia, little more than a twelvemonth before. But the heart, at eighteen, is not naturally inclined to despond, and never was one less so than that of Franklin. He immediately applied for and obtained employment in the office of the celebrated Mr Palmer. Amongst other works on which he was set to work here, was a second edition of Wollaston's Religion of Nature. Conceiving some of the positions assumed in it to be weak or erroneous, he composed and published a small metaphysical treatise in refutation of them. This pamphlet acquired him considerable credit with his master as a man of talent; but that gentleman reprobated, with the utmost abhorrence, the doctrines maintained in his publication, which, truth compels us to say, were completely irreligious, so far as regarded the Christian faith, or any other acknowledged system of belief. Free-thinking, however, was then in fashion among the higher and more learned classes, and his pamphlet procured him the countenance of various eminent individuals; amongst the rest, of Dr Mandeville, author of the Fable of the Bees, and Dr Pemberton, Sir Isaac Newton's friend. He was likewise waited upon by Sir Hans Sloane, who had been informed of his bringing some curiosities with him from America; amongst others, a purse of asbestos—a natural substance which resists the action of fire, and then very little known—for which he paid

Franklin a high price. From Mr Palmer's office he removed to Mr Watt's, for the consideration of a higher wage. Here he gave a striking proof of that resolute adherence to temperance, industry, and frugality, which were amongst the leading features of his character. Whilst Mr Watt's other workmen spent generally five or six shillings a-week on beer, which was brought into the office to them during the day, he drank nothing but water; and they were surprised to see that he was much stronger than any of them, while he himself had the additional comfort and satisfaction of being always clear-headed. At first they ridiculed his abstinence, and conferred on him the soubriquet of the *American Aquatic*; but as his character rose amongst them, his example, he says, "prevailed with several of them to renounce their abominable breakfast of bread and cheese, with beer; and they procured, like me, from a neighbouring house, a good basin of warm gruel, in which was a small slice of butter, with toasted bread and nutmeg. This was a much better breakfast, which did not cost more than a pint of beer, namely, three-halfpence, and at the same time preserved the head clearer." His assiduous application to business, at the same time, together with remarkable quickness in *composing* (setting up the types), recommended him to his employer, and procured him all the most urgent and best-paid work; so that, with his frugal mode of living, he quickly laid past money.

After having been about eighteen months in London, much to his advantage in every respect—for, besides becoming more proficient in his business, he had stuck to his books as sedulously as ever, even although he frequently went to the play, made little pleasure excursions, and mingled a good deal in society—he was about to set out on a tour through Europe, with a young intelligent fellow-workman (designing to maintain themselves during their pilgrimage by means of their calling), when he accidentally met with Mr Denham, before noticed as being his fellow-passenger from America. That gentleman was on the eve of returning to Philadelphia, to open a merchant's store, and offered Franklin the situation of his clerk, with a salary of L.50 per annum. This sum was less than he was making as a compositor; but an anxious desire to revisit his native country induced him to accept of it. They set sail accordingly—Franklin now supposing he had relinquished the composing-stick for ever—and arrived at Philadelphia on the 11th of October 1726. Franklin had just entered his twenty-first year at this time; and he mentions having drawn up for himself in writing, during the voyage, a plan for the regulation of his future conduct. This interesting document was

afterwards unfortunately lost ; but he tells us himself that he pretty faithfully adhered to the rules thus early laid down, even into old age. Upon his arrival, he found his old acquaintance, the governor, had been supplanted in his office, and was held in general contempt. They met several times, but no allusion was ever made by Franklin to the disgraceful imposture the other had practised on him.

Franklin's new employer had only been in business for a few months, when both were seized at the same time with a violent disorder, which carried off the master in a few days, and brought the clerk to the brink of the grave. On his recovery, being thus once more left destitute, he was fain to accept employment as a printer from his old master Keimer, who was now somewhat better off in the world, but still utterly ignorant of his profession. The whole charge of the office, with that of instructing four or five ignorant apprentices, devolved on Franklin. "I also," says he, "upon occasion, engraved various ornaments, made ink, gave an eye to the shop—in short, I was, in every respect, the *factotum*." But he likewise, at this time, gave another remarkable instance of his versatile ingenuity.

"Our press," says he, "was frequently in want of the necessary quantity of letter, and there was no such trade as that of letter-founder in America. I had seen the practice of this art at the house of James, in London, but had at the time paid it very little attention. I, however, contrived to fabricate a mould. I made use of such letters as we had for punches, founded new letters of lead in matrices of clay ; and thus supplied, in a tolerable manner, the wants that were most pressing." Franklin's inventive mind would seem here to have obtained a distant glimpse of the principle of *stereotyping*, which has since been carried to such a height of usefulness and perfection, as exemplified in the various publications of the editors of this miscellany.

Keimer having engaged Franklin solely with the view of having his apprentices so far initiated in the art as that he could dispense with their instructor's services, took the first occasion to quarrel with him when he thought he had sufficiently attained his object. Upon their separation, one of Keimer's apprentices, named Meredith, who, like all the others, had conceived a great veneration for Franklin, proposed that they should enter into partnership together.—Meredith's friends undertaking to furnish the capital necessary for purchasing the materials, &c. This offer was too advantageous to be refused ; and types, press, &c., were forthwith commissioned from London ; but while preparing to put their plan into exe-

cution, Franklin was induced, during the interval, to return again to Keimer, at the urgent solicitation of the latter. The motive for this humble entreaty was that individual's having taken a contract for the printing of some paper-money for the state of New Jersey, requiring a variety of new cuts and types, which he knew well nobody in that place but Franklin could supply. This also presents us with a very striking instance of Franklin's remarkable gift of invention.

"To execute the order," says he, "I constructed a copper-plate printing-press ! the first that had been seen in the country. I engraved various ornaments and vignettes for the bills, and we repaired to Burlington together, where I executed the whole to the general satisfaction, and he (Keimer) received a sum of money for this work, which enabled him to keep his head above water for a considerable time longer."

At Burlington, Franklin formed acquaintance with all the principal personages of the province, who were attracted by his superior abilities and intelligence. Amongst these was the inspector-general, Isaac Decon, "who," says Franklin, "was a shrewd and subtle old man. He told me that his first employment had been that of carrying clay to the brick-makers ; that he did not learn to write till he was somewhat advanced in life ; that he was afterwards employed as underling to a surveyor, who taught him his trade : and that, by industry, he had at last acquired a competent fortune. 'I foresee,' said he, 'that you will soon supplant this man (speaking of Keimer), and get a fortune in the business at Philadelphia.' He was wholly ignorant at the time of my intention of establishing myself there, or any where else."

Franklin had scarcely returned from Burlington, when the types commissioned for himself and Meredith, from London, arrived ; and having settled matters with Keimer, the partners immediately took a house, and commenced business. They were in the act of opening up their packages, when a countryman came in to have a job done ; and as all their cash had been expended in their various purchases, "this countryman's five shillings," says Franklin, "being our first fruits, and coming so seasonably, gave me more pleasure than any crown I have since earned." A number of young men having, during the preceding year, formed themselves, at Franklin's suggestion, into a weekly club for the purpose of mutual improvement, they were so well pleased with the beneficial results they experienced from their meetings, that, when the originator of their society set up in business, every one exerted himself more than another to procure him employment. One of them obtained from the Quakers the printing of forty sheets

of a history of that sect, then preparing at the expense of the body. "Upon these," says Franklin, "we worked exceeding hard, for the price was very low. It was in folio, upon *pro patria* paper, and in the *pica* letter, with heavy notes in the smallest type. I composed a sheet a-day, and Meredith put it to press. It was frequently eleven o'clock at night, sometimes later, before I had finished my distribution for the next day's task, for the other little jobs that came in kept us back in this work; but I was so determined to compose a sheet a-day, that one evening, when my form was imposed, and my day's work, as I thought, at an end, an accident broke the form, and deranged two complete folio pages. I immediately distributed and composed them anew before I went to bed." This unwearied industry, which soon became known, acquired Franklin great reputation and credit amongst his townsmen, and business began rapidly to flow in upon them.

The establishment and management of a newspaper seems to have all along been a favourite project with Franklin; probably because, from his former experience in it, and the consciousness of his powers of writing, he felt himself so well adapted for the task. The partners soon found themselves in circumstances to enable them to make the trial; but Franklin having incautiously divulged their intention to a third person, that individual informed their old master Keimer of the fact, who immediately took steps to anticipate them, and issued a prospectus of a paper of his own. The manner in which Franklin met and defeated this treachery is exceedingly characteristic. There was another paper published in Philadelphia by Mr Bradford, which had been in existence for some years, but was such a miserable affair, that it only preserved its vitality because no other arose to knock it on the head. In order to keep down Keimer's publication, however, Franklin saw the policy of supporting the old one, until prepared to start his own. He thereupon set about writing a series of amusing articles for it, which the publisher, Bradford, was of course very glad to insert. "By this means," says Franklin, "the attention of the public was kept fixed on that paper, and Keimer's proposals, which we burlesqued and ridiculed, were disregarded. He began his paper, however; and after continuing it for nine months, having at most not more than ninety subscribers, he offered it to me for a mere trifle. I had for some time been prepared for it; I therefore instantly took it upon myself, and in a few years it proved very profitable to me." In fact, it obtained notoriety and applause at the very first number, in consequence of some observations therein by Franklin, on an important colonial question; and various members

of Assembly exerted themselves so well in his behalf, that the printing of the House was speedily transferred from Bradford to his two young rivals. In the management of his newspaper, Franklin pursued a system of unflinching integrity. He steadfastly refused to give admission into his columns of any article containing personal abuse of particular individuals. Whenever he was requested to publish any thing of this sort, his answer was, that he would print the piece by itself, and give the author as many copies for his own distribution as he wished. He very wisely considered that his subscribers expected him to furnish them with useful and entertaining information, and not with personal slander or private discussions with which they had no concern.

Luckily for Franklin, almost at the commencement of the newspaper, an opportunity occurred of getting rid of his partner Meredith, who had become an idle drunken fellow, and had all along been of comparatively little use in the concern. Meredith's father failed to implement the bargain for advancing the necessary capital to pay the demands of the paper merchant, and other expenses necessarily attending their speculation, when they became due. A suit was accordingly instituted against the partners, and as Meredith's father declared his inability to pay the amount of the claims upon them, the son offered to relinquish the whole concern into Franklin's hands, on condition that the latter would take upon him the debts of the company, repay his father what he had already advanced, settle his own little personal debts, and give him thirty pounds—and a *new saddle*! By the kindness of two friends, who, unknown to each other, came forward simultaneously and unasked to his assistance, Franklin was enabled to accept the offer. The agreement was carried into effect; and thus do we find this extraordinary man, at the age of twenty-four, and in the place where he had arrived penniless only seven years before, settled down in business, with a thriving trade; proprietor of an extensively circulated newspaper, and a firmly established reputation of no ordinary kind. All this success, however, the result of his own good conduct, perseverance, and frugality, had no undue effect on his well-regulated mind, or could induce him to assume those airs of arrogant superiority and pretension, which have but too frequently blemished the character of those who have praiseworthy achieved their own elevation in society. On the contrary, he dressed more plainly, and deported himself more humbly, than ever; and to show that he was not above his business, he sometimes wheeled home on a barrow, with his own hands, the paper which he purchased at the stores.

Although we are, in a manner, only arrived at the commencement of that long career of usefulness as a citizen, a statesman, and a philosopher, which has rendered his name so illustrious, we have undoubtedly got through the most interesting part of his biography. We have noted by what means—by what patient exertion, self-control, industry, frugality, temperance, and integrity, he overcame all obstacles, and attained the station at which we have seen him arrive; fitted himself for the discharge of those important duties to which the voice of his country called him; and acquired those fixed habits of study, observation, and inquisitive research, by which he afterwards penetrated so deep into the arcanum of nature's mysteries. It will be needless for us, therefore, to trace his private history so inquisitorially as we have hitherto done through the remainder of his eminently successful fortunes.

Soon after getting the whole printing and newspaper concern into his hands, there was an outcry among the people for a new emission of paper-money. Franklin took up the cause, and by his arguments in a pamphlet which he published on the subject, contributed so greatly to the success of the proposal, and obtained himself so much popularity, that upon its being resolved to issue the notes, Franklin was selected to print them. He then opened a stationer's shop, and from his success in business, began gradually to pay off his debts. He took care, he says, not only to be *really* industrious and frugal, but also to avoid every appearance to the contrary—was plainly dressed, and was never seen in any place of public amusement: never went a-fishing or hunting. A book, indeed, enticed him sometimes from his work, but even that indulgence was seldom, and by stealth. Meanwhile, his old master Keimer went fast to ruin, and, with the exception of old Mr. Bradford, who was rich and did not care for business, he was the only printer in the place. He shortly afterwards married Miss Read, the lady named in a former part of this memoir. Franklin's behaviour to this young lady had not been altogether blameless. Previous to his sailing for England, he had exchanged pledges of affection with her; yet, all the while he was away, he only sent her one letter. Her friends and herself, concluding that he either never meant to return, or that he wished to drop connection with her, she was induced to accept the hand of another suitor; and on his return to America, Franklin found her married—an event that seems to have given him extremely little uneasiness. The lady's husband proved a great rogue, deserted her, and it was subsequently ascertained that he had still a former wife living. After being established in business, and rising in the world, the intimacy between Franklin and

her family was renewed, and it was not long, ere, despite her dubious situation, they hazarded a fulfilment of their early vows. The lady was about Franklin's own age, and proved, according to his own testimony, "an honour and a blessing" to him.

In 1731, Franklin drew up proposals for a public subscription library at Philadelphia, being the first project of the sort that had been started in America. Fifty persons at first subscribed forty shillings each, and agreed to pay ten shillings annually; and the establishment was put under such judicious rules of management, that in the course of ten years it became so valuable and important as to induce the proprietors to get themselves incorporated by royal charter. This library afforded its founder facilities of improvement of which he did not fail to avail himself, setting apart, as he tells us, an hour or two every day for study, which was the only amusement he allowed himself.

In 1732, Franklin began to publish his *Poor Richard's Almanack*, so called from his giving it forth under the name of Richard Saunders. It was chiefly remarkable for the numerous and pithy maxims it contained, all tending to exhort to industry and frugality. It was continued annually for twenty-five years, and the proverbs and trite moral observations scattered throughout it, were afterwards thrown together into a connected discourse, under the title of the "Way to Wealth." So highly esteemed is this production amongst his countrymen, that copies of it are to this day to be found framed and glazed in the houses even of the wealthiest people in Philadelphia, and indeed in every province of North America.

As Franklin advanced in worldly prosperity, he endeavoured to make his personal acquirements keep pace with his upward progress in society; and amongst other accomplishments applied himself sedulously to the study of the dead and modern languages, of which, besides his native tongue, he as yet scarcely knew any thing. The following is his own account of his private *curriculum* :—

"I had begun in 1733 to study languages. I soon made myself so much a master of the French, as to be able to read the books in that language with ease. I then undertook the Italian. An acquaintance, who was also learning it, used often to tempt me to play chess with him. Finding this took up too much of the time I had to spare for study, I at length refused to play any more, unless on this condition, that the victor in every game should have a right to impose a task, either of parts of the grammar to be got by heart, or in translations, &c., which tasks the vanquished was to perform upon honour

before our next meeting. As we played pretty equally, we thus beat one another into that language. I afterwards, with a little pains-taking, acquired as much of the Spanish as to read their books also. I have already mentioned that I had only one year's instruction in a Latin school, and that when very young, after which I neglected that language entirely; but when I had attained an acquaintance with the French, Italian, and Spanish, I was surprised to find, on looking over a Latin Testament, that I understood more of that language than I had imagined, which encouraged me to apply myself again to the study of it; and I met with the more success, as those preceding languages had greatly smoothed my way."

It was not to be supposed that a man of Franklin's comprehensive mind, and useful practical talents, would be allowed to remain long in the ranks of private life. Accordingly, in the year 1736, he was appointed clerk to the General Assembly at Pennsylvania. No opposition was made to his appointment the first year; but on the next election, a new member of the house opposed his return in a long speech. Franklin was, however, again elected, much to his satisfaction; for although the place was one of almost no direct emolument, it gave him an opportunity of making friends amongst the members, and ultimately to secure to himself the printing of most of the public papers, which was previously shared with his rivals. The new member who had resisted his re-election was a man of talents and character; and Franklin, although too independent to pay any cringing servility to him, perceived the propriety of gaining his good opinion; and the expedient he hit upon for this purpose affords another instance of his shrewdness and knowledge of human nature. Having learned that the gentleman possessed a very rare and curious book, he wrote him a polite note, requesting that he would do him the favour of lending it for a few days. The book was immediately sent; and in about a week was returned by the borrower, with a short epistle, expressive of his gratitude for the favour. The member was so much conciliated by the circumstance, that the next time he met him in the house, he addressed him with great civility, manifested ever afterwards a great desire to serve him, and they became, in short, intimate friends. "This is another instance," observes Franklin, "of the truth of an old maxim I had learned, which says, 'He that has done you a kindness, will be more ready to do you another, than he whom you yourself have obliged.' And it shows how much more profitable it is prudently to remove, than to resent, return, and continue, inimical proceedings." He was thereafter re-elected to the same post, without opposition, for several

years successively. In the following year, 1737, he supplanted his rival in trade, Bradford, in the office of deputy-postmaster for the state of Pennsylvania. These honourable preferments induced him to incline his thoughts to, and take a more active part in, public affairs than he had hitherto done.

He first turned his attention to the state of the city police, which was then in a shameful condition, and he soon effected a thorough reformation in the whole system. He suggested and promoted the establishment of a fire insurance company, the first that was projected in America. He afterwards successively exerted himself in organising a philosophical society, an academy for the education of youth, and a militia for the defence of the province. In short, every department of the civil government, as he tells us, and almost at the same time, imposed some duty upon him. "The governor," says he, "put me into the commission of the peace; the corporations of the city chose me one of the common council; and the citizens at large elected me (1747) a burgess to represent them in Assembly. This latter station was the more agreeable to me, as I grew at length tired with sitting there to hear the debates, in which, as clerk, I could take no part, and which were often so uninteresting, that I was induced to amuse myself with making magic squares, or circles, or any thing, to avoid weariness; and I conceived my becoming a member would enlarge my power of doing good. I would not, however, insinuate that my ambition was not flattered by all these promotions—it certainly was, for, considering my low beginning, they were great things to me; and they were still more pleasing, as being so many spontaneous testimonies of the public good opinion, and by me entirely unsolicited."

At this time there was no military defensive force in Pennsylvania. The inhabitants were mostly Quakers, and neglected to take any measures of precaution against the dangers to which, from the French possessions in Canada, they were continually exposed. All the exertions of the governor of the province to induce the Quaker Assembly to pass a militia law, proved ineffectual. Franklin thought something might be done by a subscription among the people; and to pave the way for this, he wrote and published a pamphlet called "Plain Truth." In this he clearly exposed their helpless and perilous situation, and demonstrated the necessity of co-operating for their mutual defence. The pamphlet had a sudden and surprising effect. A meeting of the citizens was held, at which proposals of the intended union, previously drawn up and printed by Franklin, were distributed about the room, to be signed by those who approved of them; and when the com-

pany separated, it was found that above twelve hundred signatures had been appended to the papers. Other copies were distributed through the province, and the subscribers at length amounted to upwards of ten thousand ! All these individuals furnished themselves, as soon as they could, with arms ; formed themselves into companies and regiments ; chose their officers, and had themselves regularly instructed in military exercises. The women made subscriptions amongst themselves, and provided silk colours, which they presented to the companies, embellished with devices and mottoes furnished by Franklin. Such influence has one master-mind amongst his fellows in a time of emergency !

Franklin's modesty, however, was more than commensurate with his patriotism. The officers of the companies composing the Philadelphia regiment unanimously chose him for their colonel, but he declined the office in favour of a man of greater wealth and influence, who, on his recommendation, was immediately elected.

It would, perhaps, have been desirable to have followed Franklin through the remainder of his public and political career, without pausing to advert to other pursuits, entirely unconnected therewith, to which he devoted himself. We find, however, that the chronological violence of which we would in that case necessarily be guilty, would only serve to confuse our narrative. We will now, therefore, proceed to introduce him to our readers in an entirely new character from any in which they have yet seen him.

Directing his attention to pursuits connected with natural philosophy, particularly with respect to electricity, he began to suspect that lightning could be identified with the electric matter procured by artificial means. Full of this idea, it was yet some time before he found what he conceived a favourable opportunity of trying its truth in the way he meditated. A spire was about to be erected in Philadelphia, which he thought would afford him facilities for the experiment ; but his attention having been one day drawn by a kite which a boy was flying, it suddenly occurred to him that here was a method of reaching the clouds preferable to any other. Accordingly, he immediately took a large silk handkerchief, and, stretching it over two cross sticks, formed in this manner his simple apparatus for drawing down the lightning from its cloud. Soon after, seeing a thunder-storm approaching, he took a walk into a field in the neighbourhood of the city, in which there was a shed, communicating his intentions, however, to no one but his son, whom he took with him to assist him in raising the kite ; this was in June 1752.

The kite being raised, he fastened a key to the lower extremity of the hempen string, and then insulating it by attaching it to a post by means of silk, he placed himself under the shed, and waited the result. For some time no signs of electricity appeared. A cloud, apparently charged with lightning, had even passed over them without producing any effect. At length, however, just as Franklin was beginning to despair, he observed some loose threads of the hempen string rise and stand erect, exactly as if they had been repelled from each other by being charged with electricity. He immediately presented his knuckle to the key, and, to his inexpressible delight, drew from it the well-known electrical spark. He said afterwards that his emotion was so great at this completion of a discovery which was to make his name immortal, that he heaved a deep sigh, and felt that he could that moment have willingly died. As the rain increased, the cord became a better conductor, and the key gave out its electricity copiously. Had the hemp been thoroughly wet, the bold experimenter might, as he was contented to do, have paid for his discovery with his life. He afterwards brought down the lightning into his house, by means of an insulated iron rod, and performed with it, at his leisure, all the experiments that could be performed with electricity. But he did not stop here. His active and practical mind was not satisfied even with the splendid discovery, until he had turned it to a useful end. It suggested to him, as is well known, the idea of a method of preserving buildings from lightning, which is extremely simple and cheap, as well as effectual, consisting, as it does, in nothing more than attaching to the building a pointed metallic rod, rising higher than any part of it, and communicating at the lower end with the ground. This rod the lightning is sure to seize upon, in preference to any part of the building; by which means it is conducted to the earth, and prevented from doing any injury. There was always a strong tendency in Franklin's philosophy to these practical applications.

Franklin's discoveries did not at first attract much attention in England; and, in fact, he had the mortification to hear that his paper on the similarity between lightning and electricity had been ridiculed when read in the Royal Society. Having fallen, however, into the hands of the naturalist Buffon, that celebrated man translated and published it at Paris, when it speedily excited the astonishment of all Europe. What gave his book the more sudden and general celebrity was the success of one of its proposed experiments for drawing lightning from the clouds, made at Marly. This engaged the public attention every where. The "Philadelphia experiments," as

they were called, were performed before the king and court, and all the curious of Paris flocked to see them. Dr Wright, an English physician, being at Paris at the time, wrote to a member of the Royal Society of London, an account of these wonders, and stating the astonishment of all the learned men abroad of Franklin's writings being so little noticed in England. The society were thus in a manner compelled to pay more attention to what they had previously considered as chimerical speculation, "and soon," says Franklin, "made me more than amends for the slight with which they had before treated me. Without my having made any application for that honour, they chose me a member, and voted that I should be excused the usual payments, which would have amounted to twenty-five guineas, and ever since have given me their Transactions gratis. They also presented me with the gold medal of Sir Godfrey Copley for the year 1753, the delivery of which was accompanied with a very handsome speech of the president, Lord Macclesfield, wherein I was highly honoured."

Although the numerous important public duties which Franklin was called upon latterly to discharge, chiefly engrossed his time, he still returned to his philosophical studies on every occasion that offered, and made several curious and interesting discoveries. Amongst others, was that of producing so intense a degree of cold, by the evaporation of ether in the exhausted receiver of an air-pump, as to convert water into ice. This discovery he applied to the solution of a number of phenomena, particularly a singular fact, which philosophers had previously laboured in vain to account for, namely, that the temperature of the human body, when in health, never exceeds 96° of Fahrenheit's thermometer, though the atmosphere which surrounds it may be heated to a much greater degree. This he attributed to the increased perspiration, and consequent evaporation, produced by the heat.

The tone produced by rubbing the brim of a drinking glass with a wet finger, had been generally known. This subsequently gave rise to the art of playing tunes on a variety of glasses of different sizes, now called "musical glasses." The sweetness of the tones induced Franklin to make a variety of experiments; and he at length formed that elegant instrument which he called the Armonica.

Perhaps no philosopher ever stood on a prouder eminence in the world's eye than Franklin during the latter half of his life. The obscurity of his origin served but to make his elevation the more brightly conspicuous, and honours were showered on him from all quarters of the civilised world. In 1766, he visited Holland and Germany, and was received with the

greatest testimonies of respect from all men of science and distinction. At Paris, Louis XV. honoured him with the most distinguished marks of his favour. Some years afterwards he visited Scotland with his son, when the University of St Andrew's conferred upon him the degree of Doctor of Laws. Its example was followed by Edinburgh and Oxford; and he was also elected a member of almost every learned society throughout Europe.

Little need here be said of the political career of this eminent man. He was most energetic in defending the colonies during the French Canadian war; and when the quarrel arose betwixt the provinces and mother country, he did all in his power to bring the differences to an amicable settlement. Failing in this desirable object, during a residence for the purpose in London, he returned to America in 1775. The day after his arrival, he was elected by the legislature of Pennsylvania as a delegate to Congress. Hostilities had then commenced; but it would be repeating a thrice-told tale to enter into any account of the protracted and bloody struggle that ensued, or the nature of its termination. In 1778, Franklin was sent as ambassador to the court of France, where he soon brought about an alliance between that nation and the North American states. When the British ministry at length saw the necessity of recognising the independence of the states, the definitive treaty to that effect was signed at Paris on the 3d of September 1783, by Dr Franklin, Mr Adams, and Mr Jay, for the states, on the one hand; and by Mr David Hartley, for Great Britain, on the other. Franklin continued at Paris for the two following years; but at last, by his own urgent request, was recalled. Shortly after his return, he was elected president of the supreme executive council, and lent all his still perfect energies to consolidating the infant government. Age and infirmities, however, claimed their usual ascendancy, and in 1788 he retired wholly from public life.

Franklin's last public act—and it was one in beautiful accordance with the whole tenor of his life—was putting his signature, as president of the Anti-Slavery Society, to a memorial presented to the House of Representatives, praying them to exert the full powers entrusted to them to discourage the revolting traffic in the human species. This was on the 12th of February 1789. From this day forward, he was confined almost constantly to bed with the stone, from which he suffered the most excruciating agony. Yet when his paroxysms of pain drew forth, as they did occasionally, an irrepressible groan, he would observe, he was afraid he did not bear his sufferings as he ought—acknowledged his grateful

sense of the many blessings he had received from the Supreme Being, who had raised him from small and low beginnings to such high rank and consideration among men, and made no doubt but his present afflictions were kindly intended to wean him from a world in which he was no longer fit to act the part assigned him. He latterly sank into a calm lethargic state; and, on the 17th April 1790, about eleven o'clock at night, he quietly expired. He was then aged exactly eighty-four years and three months. The following epitaph, written by himself many years previous to his death, was inscribed on his tombstone:—

“The body of BENJAMIN FRANKLIN, Printer [like the cover of an old book, its contents torn out, and stript of its lettering and gilding], lies here food for worms; yet the work itself shall not be lost, for it will (as he believed) appear once more in a new and more beautiful edition, corrected and amended by THE AUTHOR.”

In looking back on Franklin's career, it is evident that the principal feature in his character was *worldly prudence*—not in the usual and selfish acceptation of the term, but that prudence, founded on true wisdom, which dictates the practice of: honesty, industry, frugality, temperance—in short, all those qualities which may be classified under the name of “moral virtues,” as being the only certain means of obtaining distinction, respect, independence, and mental cheerfulness. There is no other writer who inculcates lessons of practical wisdom in a more agreeable and popular manner, and we much regret that the limits of this work prevent our giving many extracts illustrative of this quality. His whole conduct and writings, indeed, present the somewhat singular union of great genius with practical good sense, and of singular worldly shrewdness, with the loftiest integrity of principle. The greatest worldly honours—and few have attained higher—could not for a moment make him forget or deviate from the principles with which he started in life. Ever keeping before his mind his own origin and rise, he justly considered every man to be originally on a par in as far as regarded real intrinsic worth; and, equally by precept and example, contributed more, perhaps, than any individual who ever existed, to breaking down those invidious bars to eminence and success in life which the conventional habits and artificial feelings of society had theretofore interposed to the elevation of those unblessed by birth and fortune.

DANIEL DE FOE.

DANIEL DE FOE, the author of the celebrated fictitious narrative, *Robinson Crusoe*, was born in 1661, in the parish of St Giles, Cripplegate, in the city of London. His name was properly Foe, and he only added the *De* when grown up to manhood. His father was James Foe, a respectable butcher, of dissenting principles; and his grandfather, whose younger son his father is supposed to have been, was a yeoman of the same name, farming a small estate of his own at Elton, in Northamptonshire, and possessing the opposite principles of a Cavalier and High-churchman.

By his father, young De Foe was educated with the view of his becoming a dissenting clergyman: his chief preceptor was Mr Charles Moreton, who kept a dissenting academy at Newington Green, and subsequently emigrated to America. Whether from an unsettled disposition, or his father's inability to supply the necessary expenses, he never finished his education as a minister; but he nevertheless had acquired a knowledge at the academy of five different languages, of mathematics, natural philosophy, logic, geography, and history. His learning, however, is very plausibly supposed to have been superficial, and in which character it is spoken of by his contemporary, the poet Gay. The glory of De Foe was not destined, however, to arise from any modification of existing knowledge, but from the nervous common sense, and the power of describing imaginary beings under all the semblance of reality, with which he was endowed by nature.

The dissenting principles, which consisted in a denial of certain forms and powers assumed by the church of England, together with some dim but aspiring views respecting civil liberty, took such a fast hold of the mind of De Foe, that they never left him from the beginning to the end of his career. Entering into life at the end of the reign of Charles II., when both civil and religious tyranny were coming to a height, he could hardly fail, with such a mind and temperament as he possessed, to throw himself at once into the turmoil of polemical warfare. Accordingly, at the age of twenty-one, he wrote a satire upon the church clergy, styled "*Speculum Crape-Gownorum*." When only three years older, he took a more practical step against the church, by joining the rebellion of the Duke of Monmouth, which was very speedily put down. De Foe narrowly escaped being taken prisoner, and return-

ing to London, eluded the wide-sweeping and bloody revenge with which the government visited the actors in that unfortunate movement. He soon after embarked in business as a sort of agent between the London hosiers and the country manufacturers, and, being free by birth, took up his living as a citizen of London. This happened in 1687-8, on the eve of the revolution, a crisis when neither stockings nor citizenship could keep De Foe from pen and ink; and accordingly he joined the numerous assailants of the tottering power of King James. Of the revolution, he was not only a supporter—he hailed it with enthusiastic joy, and ever after observed the 4th of November, the anniversary of the landing of the Prince of Orange, as a holiday. In October 1689, when King William and Queen Mary paid their first ceremonial visit to Guildhall, Daniel De Foe appeared conspicuously in the procession as one of a royal regiment of volunteer horse, made up of the chief citizens (chiefly dissenters), and who, gallantly mounted and richly accoutred, made a very great show. He admired the character of King William to a degree of enthusiasm, and, unlike the generality of the English people, retained a warmly grateful sense of his services to British liberty and freedom of conscience. As an exposure of the absurd cry that the king was a foreigner, De Foe wrote his poetical satire, entitled “the True-born Englishman,” a piece which, though deficient in polish, is a masterpiece of good sense and just reflection, and shows a thorough knowledge both of English history and of the English character. It is, indeed, a complete and unanswerable exposure of the pretence set up by the English to a purer and loftier origin than all the rest of the world, instead of their being a mixed race from all parts of Europe, settling down into one common name and people. King William was so much gratified by this publication as to extend his personal friendship to the author, who was often closeted with him during the latter part of his majesty’s life. His pen, however, added more to his celebrity than his fortunes. Having engaged in the Portuguese and Spanish trade, he lost a vessel by shipwreck, and, from one cause or other, miscarried in business of two or three descriptions. Like most falling men, he committed some errors in attempting to retrieve his affairs. They could not, however, have been very unpardonable, as he was not made bankrupt, and his creditors agreed to take his own personal security for the composition. What is still more to his credit, after being fully discharged, he continued to pay to the extent of his power, to the amount of some thousand pounds. The fact is equally characteristic, that, while in this state of depression, he occupied himself in projecting

ways and means for the government, which obtained him a small place and other countenance, and restored him to comparative competence.

The death of King William in 1701 made matters much for the worse with De Foe. Under Queen Anne, the high church system waxed more and more furious and intolerant, till, in the end, a university preacher was able, with impunity, to lead an infatuated mob through the streets of London, pulling down the dissenters' places of worship, burning their private dwellings, and making it unsafe for one of that profession to be seen abroad. The established clergy, in general, cherished the most embittered feelings towards the dissenters, and desired to see them subjected to very severe penalties. De Foe marked, with an exact eye, the extravagant notions which the heat of the time had engendered in the minds of these men, and under the title of "The Shortest Way with the Dissenters," brought out a pamphlet, in which he caricatured the whole under a semblance of the most serious earnest—inasmuch that, at first, the pamphlet was highly extolled by the clergy as a more than usually uncompromising demonstration of their favourite views.

When it was at length discovered that the author was only burlesquing the sentiments of the clergy, he was immediately denounced as one of the most profligate of men; nor were even his own brethren, the dissenters, so sure of the propriety or expediency of his satire as to stand up in his defence. A prosecution for seditious libel, in which the accusers hypocritically overlooked the real, as opposed to the apparent tendency of the pamphlet, was instituted against him. He was moreover cheated into a plea of guilty, by the expectation of a pardon, when, to the eternal disgrace of justice, a sentence followed, inflicting a triple appearance in the pillory, a fine of two hundred marks, imprisonment during the queen's pleasure, and sureties for good behaviour for seven years. The firmness of character of this extraordinary man was strikingly exemplified by the fortitude with which he endured the ignominy of the first part of his sentence, and the total ruin of his affairs (and at the time he possessed a wife and six children), which followed a prosecution so merciless. Instead of yielding to despondency, his elastic mind fell back upon its resources, and, besides the immediate production of his caustic satire, termed "A Hymn to the Pillory," during his imprisonment, which lasted nearly two years, he commenced his celebrated journal, "The Review;" published a collection of his works; kept up a pamphleteering warfare on various public topics with all his usual activity; and in no respect showed any

mental yielding to his fallen fortunes. Pope, in his *Dunciad*, has made an ungenerous allusion to the circumstances :

" See where on high stands unabashed De Foe."

But without any wish to depreciate the merit of this poet, it may be said that De Foe had ten thousand times more real glory in enduring the honourable dishonour of the pillory for an effort in behalf of humanity and toleration, than what the author of the *Rape of the Lock* had in any single transaction of his capricious life.

It is a remarkable fact that De Foe was condemned for patriotic conduct under a Whig ministry, and that he was released and consoled by a Tory one. On the accession of Harley and Bolingbroke to power, the former interceded for and obtained his liberation, and prevailed upon the queen to supply the money for his fine and expenses. This can scarcely be called a disinterested proceeding, as the object evidently was to buy off a writer of whom the new cabinet had some reason to stand in dread. De Foe accepted from Harley the charge of acting as a confidential agent, at Edinburgh, in the transactions of the Union between Scotland and England—a duty which he is allowed to have discharged with activity and zeal, and chronicled in his "*History of the Union*" with much ability. It does not appear that he either employed his pen, or gave his personal services, in behalf of any of the expressly Tory measures of this celebrated cabinet; he only abstained from writing against it, which was the least that his obligations to Harley would allow him to do. He had, besides, another and equally cogent reason for doing little at this time in behalf of the popular cause. The popular cause was hardly true to itself. The mass of the community were led away by the insane cry of "the church is in danger," from the pursuit of their own proper objects, into a defence of others with which they had nothing to do. De Foe, whose mind went always in the van of the age, suffered more from the party which he led than from that which he opposed; so that it could hardly be wondered at if he at last drew off from active combat, and contented himself with merely cherishing in his own bosom those abstract principles which he considered his fellows not yet fitted to realise. Having published a pamphlet, in which he ironically urged the people to bring in the Pretender by a caricatured use of all the Jacobite arguments, he was prosecuted for it by a co-patriot, named William Benson, who, being utterly unable to see the real drift of the *jeu d'esprit*, conceived that the author was in league with the disinherited Stuart, and endeavoured to bring him to trial accordingly for high

treason. It was only through the friendly zeal of the Tory Harley, and his representations to Queen Anne, that De Foe was released from Newgate, whither he had been committed on the judges' warrant for writing something in defence of his pamphlet, after its presentation to the grand jury, and his being compelled to give bail to appear for trial. Such was the perseverance of his enemies on this occasion, that his ministerial friends thought it most advisable to cover him by a formal royal pardon, to which event he has alluded with considerable humour.

De Foe's defence of a proposed commercial treaty with France, on grounds which exhibit the clearness of his ideas on that subject to great advantage, brought on a still greater torrent of enmity and abuse; until at length the accession of King George I., which he had strenuously supported, by depriving him of every species of protection, drove him from politics altogether. His spirit seemed at last to give way to so much unrelenting enmity, and a slight fit of apoplexy ensued—an event which rendered an appeal which he soon after published, in defence of his conduct and writings, more particularly impressive.

At the verge of three score, struck with one fit of apoplexy, and tormented with the gout and stone, this persecuted, but most virtuous and ingenious man, retired to Stoke Newington, and turned to an employment which might rather have been expected to engage him in the bloom and verdure of life—namely, the writing of romances. His *Robinson Crusoe*, which was among the first, appeared in 1719, and immediately obtained that degree of public favour which it has ever since maintained. The original idea was communicated to him by a Scottish mariner, named Alexander Selkirk, who had accompanied Captain Woodes Rogers upon his voyage round the world, and been left for three or four years upon the uninhabited island of Juan Fernandez, in the Pacific Ocean. It has a merit which does not belong to any of the other romances of De Foe; for while these in general refer to the very lowest and most profligate characters in social life—such as pickpockets, sharpers, and women of various degrees and kinds of infamy—and are, therefore, of very questionable moral tendency, this legend of the lone and melancholy sea is a complete abstraction from all polluting scenes, depending for its interest solely upon the sympathy which we feel for a human being placed in such an extraordinary situation, and the ingenuously minute and well-conceived train of circumstances and adventures which the author has imagined for his hero. "The great beauty of this fiction," says a recent reviewer, "consists, not

in the hero, but his situation, and the admirable manner in which he is made to adapt himself to it. Human sympathy attends his every action, and the simple and natural pathos of a plain unsophisticated man on the sublimity and awfulness of perfect solitude, moves more than would all the feeling and eloquence of Rousseau, had he attempted a similar story. No wonder this tale is translated into all the European languages, and even into Arabic, as we are informed by Burckhardt." It will be in vain, this critic thinks, to contend for the same merit in Moll Flanders, Captain Singleton, Colonel Jack, and other romances produced by De Foe—yet they show, equally with Crusoe, that first-rate sign of genius, the power of imagining a character within a certain range of existence, and throwing into it the breath of life and individualisation, which was a pre-eminent mental characteristic of De Foe. This was also shown in various works of fiction, which he produced as veritable histories and biographies, such as the Citizen's Account of the Great Plague of London in 1665, the Memoirs of Captain Carleton, and others. The most acute readers have been deceived by the amazing appearance of natural probability borne by these works. Even in his lowest romances there are touches here and there which charm us by their exquisite simplicity and truth—as, in "Colonel Jack," where the boy hero and his companions are sitting at a three-halfpenny ordinary, and are delighted, even more than with their savoury fare, to hear the waiter cry, "Coming, gentlemen, coming," when they cry for a cup of small beer; and also where we are told as a notable event, that "about this time the Colonel took upon him to wear a shirt."

Notwithstanding the number and success of his publications, De Foe, we lament to add, had to struggle with pecuniary difficulties, heightened by domestic afflictions. To the last, when on the brink of death, he was on the verge of a jail; and the ingratitude and ill-behaviour of his son, in embezzling some property which De Foe had made over for the benefit of his sisters and mother, completed his distress. He was supported in these painful circumstances by the assistance and advice of Mr Baker, the celebrated naturalist, who had married his youngest daughter Sophia. The subjoined letter gives a melancholy but very striking picture of the state of his feelings at this sad juncture:—

"DEAR MR BAKER—I have your very kind and affectionate letter of the 1st: But not come to my hand till the 10th; where it had been delay'd I kno' not. As your kind manner, and kinder Thought, from which it flows (for I take all you say to be as I always believed you to be, sincere and

Nathaniel like, without Guile), was a particular satisfaction to me ; so the stop of a Letter, however it happened, deprived me of that cordial too many days, considering how much I stood in need of it, to support a mind sinking under the weight of an affliction too heavy for my strength, and looking on myself as abandoned of every Comfort, every Friend, and every Relative, except such only as are able to give me no assistance.

"I was sorry you should say at the beginning of your Letter, you were debarred seeing me. Depend upon my sincerity for this, I am far from debarring you. On the contrary, it would be a greater comfort to me than any I now enjoy, that I could have your agreeable visits with safety, and could see both you and my dearest Sophia, could it be without giving her the grief of seeing her father in his present situation, under the load of insupportable sorrows. I am sorry I must open my griefs so far as to tell her, it is not the blow I received from a wicked, perjur'd, and contemptible enemy, that has broken in upon my spirit, which, as she well knows, has carried me on through greater disasters than these. But it has been the injustice, unkindness, and, I must say, inhuman dealing of my own son, which has both ruined my family, and, in a word, has broken my heart ; and as I am at this time under a weight of very heavy illness, which I think will be a fever, I take this occasion to vent my grief in the breasts who I know will make a prudent use of it, and tell you, that nothing but this has conquered, or could conquer me. * * * I depended upon him, I trusted him, I gave up my two dear unprovided children into his hands ; but he has no compassion, and suffers them and their poor dying mother to beg their bread at his door, and to crave, as if it were an alms, what he is bound under hand and seal, besides the most sacred promises, to supply them with ; himself, at the same time, living in a profusion of plenty. It is too much for me. Excuse my infirmity ; I can say no more ; my heart is too full. I only ask one thing of you as a dying request. Stand by them when I am gone, and let them not be wrong'd, while he is able to do them right. Stand by them as a brother ; and if you have any thing within you owing to my memory, who have bestow'd on you the best gift I had to give, let them not be injured and trampled on by false pretences, and unnatural reflections. I hope they will want no help but that of comfort and council ; but that they will indeed want, being too easie to be manag'd by words and promises. * * *

"It adds to my grief that I must never see my little grandson. Give him my blessing, and may he be to you both your joy in youth, and your comfort in age, and never add a sigh

to your sorrow. But, alas ! that is not to be expected. Kiss my dear Sophy once more for me ; and if I must see her no more, tell her this is from a father that loved her above all his comforts, to his last breath.—Your unhappy D. F.

“ About two miles from Greenwich, Kent,

“ *Tuesday, August 12, 1730.*”

From this scene of sorrow we must now hasten to an event that dropt before it the dark curtain of time. Having received a wound that was incurable, there is too much reason to fear that the anguish arising from it sank deep in his spirits, and hastened the crisis that, in a few months, brought his troubles to a final close. The time of his death has been variously stated ; but it took place upon the 24th of April 1731, when he was about seventy years of age. Cibber and others state that he died at his house at Islington, but this is incorrect. The parish of St Giles, Cripplegate, in which he drew his first breath, was also destined to receive his last. This we learn from the parish register, which has been searched for the purpose, and further informs us that he went off in a lethargy. He was buried thence, upon the 26th of April, in Tindall's Burying-ground, now best known by the name of Bunhill-Fields. His wife did not long survive him.

ALEXANDER SELKIRK.

THIS extraordinary man, whose solitary residence in the island of Juan Fernandez suggested to De Foe the matchless fiction of Robinson Crusoe, was a native of Largo, a village on the north shore of the Firth of Forth, in Scotland. He was the son of a thriving country shoemaker, named John Selkirk or Selcraig, and was born in the year 1676. Though he displayed some aptitude at school, especially in learning navigation, he was a restless and troublesome youth, of a quarrelsome temper, and almost always engaged in mischief. His father was one of those stern disciplinarians who formerly abounded in Scotland, and whose severity in dictating repulsive exercises and restraining from innocent indulgences, was so frequently rewarded, in the case of children of lively temperaments, with effects so different from what were expected. The mother, on the other hand, who was soft and pliant, made the subject of our memoir a favourite, on account of his being a seventh son, born without the intervention of a daughter ; which, in her opinion, marked him out for a lucky

destiny. The boy's own wish was to go to sea; that of his father, to keep him at home as an assistant in his own trade; and it appears that the mother advocated the views of her son, as most likely to lead to the realisation of her superstitious hopes. It must be allowed that these circumstances, operating in a humble walk of life, at the time and place alluded to, were not calculated to soothe an irritable, control a reckless, or even to preserve the original features of an amiable character.

After working till about his twentieth year at his father's trade, Alexander Selkirk left his native village, in order to avoid ecclesiastical censure for domestic quarrelling, and was at sea for four years. On his return in 1701, he once more excited public scandal by his conduct in the family circle; and being again cited by the kirk-session, along with his father, mother, and other relations, he on this occasion gave satisfaction, by submitting to a rebuke in church, and promising amendment. Having spent the winter at home, he returned in spring to England, in search of employment as a mariner. The war of the Spanish succession was now breaking out, and, among the means adopted by Britain for distressing the enemy, was the employment of those daring half-piratical commodores, who used to scour the South Seas at all seasons in search of Spanish merchantmen and bullion-ships, allowing no regular principle of warfare, except that there never was peace beyond the Line. The celebrated Captain Dampier had projected an enterprise with two well-armed vessels, under the commission of the admiralty; designing to sail up the river La Plata, and seize a few of the rich galleons which usually sailed once a-year from that port to the mother country. His vessels were respectively entitled the *St George* and the *Cinque Ports*, of twenty-six and sixteen guns; and Selkirk, who was probably recommended by experience in the same kind of employment, was appointed sailing-master of the smaller ship. The terms on which both officers and men entered this expedition were very simple: they were to have no wages beyond a certain share of their prizes. Such, however, had been the success of many previous expeditions of the same kind, that no doubt was entertained by any one on board, that they would each return with an immense load of Spanish gold. The two vessels sailed in September 1703, but were too late for the galleons, all of which had got into port before they reached Madeira. Dampier then relinquished his design upon the river La Plata, and resolved to attack some rich town on the Spanish main. But before they left this range of isles, dissensions began to break out, and, by orders of Dampier, the first lieutenant of the *St George*, with whom he had quar-

relled, was left with his servant upon St Jago. They soon after reached the coast of Brazil, where they had the misfortune to lose Captain Pickering of the Cinque Ports, who was acknowledged to be the most sensible man on board, and the main stay of the enterprise. This vessel was now very leaky, and falling under the command of a man of brutal character named Stradling, it was no longer a place of comfort for Selkirk, who about this time had a dream, which he esteemed as a forewarning of the failure of the expedition and the loss of the Cinque Ports, and formed the resolution to withdraw at the first opportunity. The situation of the men in general may be guessed from the fact, that nine of the crew of the St George went ashore upon the isle of La Granda, preferring the hazard of perpetual slavery among the Spaniards, to continuing any longer with their countrymen. The two vessels now doubled Cape Horn, and sailed for the isle of Juan Fernandez, where they were refitted. Here, however, a violent quarrel broke out between Stradling and his crew, forty-two of whom (probably including Selkirk) went ashore, vowing that they would not return to the vessel, in which there were not now so many as twenty men left. It was not without great difficulty, nor till they had become somewhat tired of the island, that they could be prevailed upon to change their resolution. For some months after this revolt, the two vessels cruised along the coast of Chili, capturing a few worthless merchant vessels, which supplied them with fresh stores, but altogether failing in the principal object of their expedition. At length Dampier and Stradling parted company, and the Cinque Ports returned to Juan Fernandez to refit.

Stradling and Selkirk had for some time been on such terms, that the latter was now determined to remain upon the island, the capability of which to support him was proved by two men, who had lived upon it since the vessels were there in spring. Accordingly, when the vessel was about to weigh, he went into a boat with all his effects, and was rowed ashore under the direction of the captain (October 1704). His first sensation on landing was one of joy, arising from the novelty of an exemption from the annoyances which had been oppressing him for such a length of time; but he no sooner heard the strokes of the receding oars, than the sense of solitude and helplessness fell upon his mind, and made him rush into the water to entreat his companions to take him once more on board. The brutal commander only made this change of resolution a subject of mockery, and told him it would be best for the remainder of the crew that so troublesome a fellow should remain where he was.

Here, then, was a single human being left to provide for his own subsistence upon an uninhabited and uncultivated isle, far from all the haunts of his kind,* and with but slender hopes of ever again mingling with his fellow-creatures. Vigorous as the mind of Selkirk appears to have been, it sank for some days under the horrors of his situation, and he could do nothing but sit upon his chest, and gaze in the direction in which the ship had vanished, vainly hoping for its return. On partly recovering his equanimity, he found it necessary to consider the means of continuing existence. The stores which he had brought ashore, consisted, besides his clothing and bedding, of a firelock, a pound of gunpowder, a quantity of bullets, a flint and steel, a few pounds of tobacco, a hatchet, a knife, a kettle, a flip-can, a bible, some books of devotion, and one or two concerning navigation, and his mathematical instruments. The island he knew to contain wild goats; but being unwilling to lose the chance of observing a passing sail, he preferred for a long time feeding upon shellfish and seals, which he found upon the shore. The island, which is rugged and picturesque, but covered by luxuriant vegetation, and clothed to the tops of the hills with wood, was now in all the bloom and freshness of spring; but upon the dejected solitary, its charms were spent in vain. He could only wander along the beach, pining for the approach of some friendly vessel, which might restore him, under however unpleasant circumstances, to the converse of his fellow-creatures.

At length the necessity of providing a shelter from the weather supplied him with an occupation that served in some measure to divert his thoughts. He built himself two huts with the wood of the pimento tree, thatching them with the long grass which grows upon the island. One was to serve him as a kitchen, the other as a bedroom. But yet, every day for the first eighteen months, he spent more or less time on the beach, watching for the appearance of a sail upon the horizon. At the end of that time, partly through habit, partly through the influence of religion, which here awakened in full force upon his mind, he became reconciled to his situation. Every morning after rising, he read a portion of Scripture, sang a psalm,

* Juan Fernandez, so called from a Spanish pilot who discovered it in 1572, is 330 miles from the nearest land in South America. It is situated in latitude 33° 40' south, and in longitude 78° 52' west. It was several times occupied, both before and after Selkirk's time, by families prosecuting trade, and even by solitary mariners, left by chance or otherwise. In 1823, Lord Cochrane found it destitute of inhabitants; but, according to very recent information, it now supports about 400 people, who acknowledge the Chilean government, and are ruled over by an Englishman named Sutcliffe.

and prayed, speaking aloud in order to preserve the use of his voice; he afterwards remarked, that, during his residence on the island, he was a better Christian than he had ever been before, or would probably ever be again. He at first lived much upon turtles, which abounded upon the shores, but afterwards found himself able to run down the wild goats, whose flesh he either roasted or stewed, and of which he kept a small stock tamed, around his dwelling, to be used in the event of his being disabled by sickness. One of the greatest inconveniences which afflicted him for the first few months, was the want of salt; but he gradually became accustomed to this privation, and at last found so much relish in unsalted food, that, after being restored to society, it was with equal difficulty that he reconciled himself to take it in any other condition. As a substitute for bread, he had turnips, parsnips, and the cabbage palm, all of excellent quality, and also radishes and water-cresses. When his clothes were worn out, he supplied their place with goat-skins, which gave him an appearance much more uncouth than any wild animal. He had a piece of linen, from which he made new shirts by means of a nail and the thread of his stockings; and he never wanted this comfortable piece of attire during the whole period of his residence on the island. Every physical want being thus gratified, and his mind soothed by devotional feeling, he at length began to positively enjoy his existence, often lying for whole days in the delicious bowers which he had formed for himself, abandoned to the most pleasant sensations.

Among the quadruped inhabitants of the isle were multitudes of rats, which at the first annoyed him by gnawing his feet while asleep. Against this enemy he found it necessary to enter into a treaty, offensive and defensive, with the cats, which also abounded in his neighbourhood. Having caught and tamed some of the latter animals, he was soon freed from the presence of the rats, but not without some disagreeable consequences, in the reflection, that, should he die in his hut, his friendly auxiliaries would probably be obliged, for their subsistence, to devour his body. He was in the meantime able to turn them to some account for his amusement, by teaching them to dance and perform a number of antic feats, such as cats are not in general supposed capable of learning, but which they might probably acquire, if any individual in civilised life were able to take the necessary pains. Another of his amusements was hunting on foot, in which he at length, through healthy exercise and habit, became such a proficient, that he could run down the swiftest goat. Some of the young of these animals he taught to dance in company with his kit-

tens ; and he often afterwards declared, that he never danced with a lighter heart or greater spirit than to the sound of his own voice in the midst of these dumb companions.

Selkirk was careful, during his stay on the island, to measure the lapse of time, and distinguish Sunday from the other days of the week. Anxious, in the midst of all his indifference to society, that, in the event of his dying in solitude, his having lived there might not be unknown to his fellow-creatures, he carved his name upon a number of trees, adding the date of his being left, and the period of time which had since elapsed. When his knife was worn out, he made new ones, and even a cleaver for his meat, out of some hoops which he found on the shore. He several times saw vessels passing the island, but only two cast anchor beside it. Afraid of being taken by the Spaniards, who would have consigned him to hopeless captivity, he endeavoured to ascertain whether these strangers were so or not, before making himself known. In both cases he found them enemies ; and on one of the occasions, having approached too near, he was observed and chased, and only escaped by taking refuge in a tree. At length, on the last day of January 1709, four years and four months from the commencement of his solitary life, he had the unspeakable satisfaction of observing two British vessels approach, evidently with the intention of touching at the island. The night having fallen before they came near, he kindled a large fire on the beach, to inform the strangers that a human being was there. During the night, hope having banished all desire of sleep, he employed himself in killing goats, and preparing a feast of fresh meat for those whom he expected to be his deliverers. In the morning, he found that the vessels had removed to a greater distance, but, ere long, a boat left the side of one of them, and approached the shore. Selkirk ran joyfully to meet his countrymen, waving a linen rag to attract their attention ; and having pointed out to them a proper landing-place, soon had the satisfaction of clasping them in his arms. Joy at first deprived him of that imperfect power of utterance which solitude had left to him, and the strangers were for a time so surprised by his rude habiliments, long beard, and savage appearance, as to be in much the same condition. But in a little they were mutually able to make explanations, when it appeared that the two vessels, called the *Duke* and *Duchess*, formed a privateering expedition similar to that of *Dampier*, but under the command of Captain *Woodes Rogers*, the former commander being here employed only as a pilot. *Dover*, the second captain, and *Fry*, the lieutenant, of *Rogers's* own vessel, were of the boat party, and after par-

taking of Selkirk's hospitality, invited him on board. But so little eager was he to leave his solitude, that he was not prevailed upon to do so, till assured that Dampier had no situation of command in the expedition. He was then brought on board the *Duke*, along with his principal effects, and, by the recommendation of Dampier, who said he had been the best man in the *Cinque Ports*, was engaged as a mate. He now found that if he had remained on board the *Cinque Ports*, he must have experienced a worse fate than his late solitude, for, soon after leaving *Juan Fernandez*, Stradling had been obliged to surrender himself and his crew to the Spaniards, on account of the leaky state of the vessel, and had ever since been in confinement.

A few weeks after leaving the island, Selkirk was appointed to the command of a prize which was fitted out as a privateer, and in this situation he conducted himself with a degree of vigour and prudence that reflects credit on his character. The business in which he was engaged was certainly one by no means calculated to give play to the more amiable qualities of human nature; but even in the sacking of coast towns, and expeditions of plunder into the interior, which for months formed his chief employment, our hero seems to have mingled humanity in as high a proportion as possible with the execution of his duty. The expedition of Rogers was as remarkable for steadiness, resolution, and success, as that of Dampier had been for quarrelling and indecision; and it excites a curious feeling of surprise when we learn that the church of England service was regularly read on the quarter-decks of these piratical vessels, and all hands piped to prayers before every action. Selkirk proved himself, by his steadiness, decent manners, and religious turn of mind, a most appropriate member of the corps commanded by Rogers, and was accordingly much valued by his superiors. At the beginning of the ensuing year, the vessels began their voyage across the Pacific, with the design of returning by the East Indies, and in this part of the enterprise Selkirk acted as a sailing-master. They did not, however, reach England till October 1711, when Selkirk had been absent from his country for eight years. Of the enormous sum of £170,000 which Rogers had realised by plundering the enemy, Selkirk seems to have shared to the amount of about eight hundred pounds.

His singular history was soon made known to the public, and, immediately after his arrival in London, he became an object of curiosity, not only to the people at large, but to those elevated by rank and learning. Sir Richard Steele, some time after, devoted to him an article in the paper entitled the *Englishman*,

in which he tells the reader, that, as Selkirk is a man of good sense, it is a matter of great curiosity to hear him give an account of the different revolutions of his mind during the term of his solitude. "When I first saw him," continues this writer, "I thought, if I had not been let into his character and story, I could have discovered that he had been much separated from company, *from his aspect and gesture*; there was a strong but cheerful seriousness in his look, and a certain disregard of the ordinary things about him, as if he had been sunk in thought. When the ship which brought him off the island came in, he received them with the greatest indifference with relation to the prospect of going off with them, but with great satisfaction in an opportunity to refresh and help them. The man frequently bewailed his return to the world, which could not, he said, with all its enjoyments, restore him to the tranquillity of his solitude. Though I had frequently conversed with him, after a few months' absence he met me in the street, and though he spoke to me, I could not recollect that I had seen him: *familiar converse in this town had taken off the loneliness of his aspect, and quite altered the air of his face.*" What makes this latter circumstance the more remarkable, is the fact of nearly three years having elapsed between his restoration to society and the time when Sir Richard Steele first saw him.

In the spring of 1712, Selkirk returned on a Sunday forenoon to his native village, and finding that his friends were at church, went thither, and for some time sat eyeing them without being recognised, a suit of elegant gold-laced clothes perhaps helping to preserve his incognito. At length his mother, after gazing on him for some time, uttered a cry of joy, and flew to his arms. For some days he felt pleasure in the society of his friends, but in time began to pine for other scenes, his mind still reverting with regret to his lost solitude. It would appear indeed, that so long an absence from society had in some measure unfitted him for it. He tried solitary fishing, built a bower like that of Juan Fernandez in the garden behind his brother's house, and wandered for days in the picturesque solitude of a glen beneath the brow of Largo Law. But nothing could compensate for the meditative life which he had lost. At length, having formed an attachment to a rustic maiden, named Sophia Bruce, whom he met in the glen just named, he suddenly disappeared with her, and never more was seen at Largo. In 1717 he once more went to sea. Nothing else is known respecting him, except that he died in the situation of lieutenant on board the ship Weymouth, in the year 1723, leaving a widow, who afterwards realised his patrimony at Largo, consisting of one small house.

The house in which he lived during his last residence at Largo is still occupied by the descendants of his brother, who preserve his chest and cup. His flip-can exists in the possession of another relation, who once did the present writer the favour of showing it to him; and his gun has for some years been the property of Major Lumsden of Lathallan, near Largo.

JAMES FERGUSON.

JAMES FERGUSON, an ingenious experimental philosopher, mechanist, and astronomer, was born in the year 1710, a few miles from Keith, a village in Banffshire, in the north of Scotland. His parents were of the poorest order, but honest and religious, and by toilsome labour in the cultivation of a few rented acres of land, contrived to support a large family of children. Of the manner in which James acquired the rudiments of education, and how he struggled to rise from obscurity to distinction, we have a most interesting account in the memoir of himself, prefixed to his "Select Mechanical Exercises," which we cannot do better than quote in an abridged form.

"At his leisure hours, my father taught his children to read and write; and it was while he was teaching my elder brother to read the Scottish Catechism that I acquired my reading. Ashamed to ask my father to instruct me, I used, when he and my brother were abroad, to take the Catechism, and study the lesson which he had been teaching my brother; and when any difficulty occurred, I went to a neighbouring old woman, who gave me such help as enabled me to read tolerably well before my father had thought of teaching me. Some time after, he was agreeably surprised to find me reading by myself: he thereupon gave me further instruction, and also taught me to write; which, with about three months I afterwards had at the grammar-school at Keith, was all the education I ever received.

My taste for mechanics was soon developed; but as my father could not afford to maintain me while I was in pursuit only of these matters, and as I was rather too young and weak for hard labour, he put me out to a neighbour to keep sheep, which I continued to do for some years; and in that time I began to study the stars in the night. In the daytime I amused myself by making models of mills, spinning-wheels, and such other things as I happened to see. I then went to serve a considerable farmer in the neighbourhood, whose name

was James Glashan. I found him very kind and indulgent : but he soon observed, that in the evenings, when my work was over, I went into a field with a blanket about me, lay down on my back, and stretched a thread with small beads upon it, at arms-length, between my eye and the stars, sliding the beads upon it till they hid such and such stars from my eye, in order to take their apparent distances from one another ; and then, laying the thread down on a paper, I marked the stars thereon by the beads, according to their respective positions, having a candle by me. My master at first laughed at me, but when I explained my meaning to him, he encouraged me to go on ; and that I might make fair copies in the daytime of what I had done in the night, he often worked for me himself. I shall always have a respect for the memory of that man.

One day he happened to send me with a message to the Rev. Mr John Gilchrist, minister at Keith, to whom I had been known from my childhood. I carried my star-papers to show them to him, and found him looking over a large parcel of maps, which I surveyed with great pleasure, as they were the first I had ever seen. He then told me that the earth is round like a ball, and explained the map of it to me. I requested him to lend me that map, to take a copy of it in the evenings. He cheerfully consented to this, giving me at the same time a pair of compasses, a ruler, pens, ink, and paper ; and dismissed me with an injunction not to neglect my master's business by copying the map, which I might keep as long as I pleased. For this pleasant employment, my master gave me more time than I could reasonably expect ; and often took the thrashing-flail out of my hands, and worked himself, while I sat by him in the barn, busy with my compasses, ruler, and pen.

I soon after was introduced by a schoolmaster whom I knew, to a Mr Cantley, an ingenious man, who acted as butler to Thomas Grant, Esq. of Achnanney, and from whom I received some instruction, particularly in decimal arithmetic, algebra, and the first elements of geometry. He also made me a present of Gordon's Geographical Grammar, which at that time was to me a great treasure. There is no figure of a globe in it, although it contains a tolerable description of the globes, and their use. From this description I made a globe in three weeks at my father's, having turned the ball thereof out of a piece of wood, which ball I covered with paper, and delineated a map of the world upon it, made the meridian ring and horizon of wood, covered them with paper, and graduated them ; and was happy to find, that by my globe, which was the first I ever saw, I could solve the problems. But this was

not likely to afford me bread ; and I could not think of staying with my father, who, I knew full well, could not maintain me in that way, as it could be of no service to him ; and he had, without my assistance, hands sufficient for all his work.

I then went to a miller, thinking it would be a very easy business to attend the mill, and that I should have a great deal of leisure time to study decimal arithmetic and geometry. But my master, being too fond of tippling at an ale-house, left the whole care of the mill to me, and almost starved me for want of victuals ; so that I was glad when I could have a little oatmeal mixed with cold water to eat. I was engaged for a year in that man's service ; and at the end of which I left him, and returned in a very weak state to my father's.

I next hired myself to a neighbouring farmer, but at the end of three months I was so much overwrought, that I was almost disabled ; which obliged me to leave him, and return to my father's, where I was confined for two months with illness. In order to amuse myself in this low state, I made a wooden clock, the frame of which was also of wood ; and it kept time pretty well. The bell on which the hammer struck the hours was the neck of a broken bottle. Having then no idea how any timekeeper could go but by a weight and a line, I wondered how a watch could go in all positions, and was sorry that I had never thought of asking Mr Cantley, who could very easily have informed me. But happening one day to see a gentleman ride by my father's house, which was close by a public road, I asked him what o'clock it then was : he looked at his watch, and told me. As he did that with so much good nature, I begged of him to show me the inside of his watch ; and though he was an entire stranger, he immediately opened the watch, and put it into my hands. I saw the spring-box with part of the chain round it, and asked him what it was that made the box turn round ; he told me that it was turned round by a steel spring within it. Having then never seen any other spring than that of my father's gun-lock, I asked how a spring within a box could turn the box so often round as to wind all the chain upon it. He answered that the spring was long and thin, that one end of it was fastened to the axis of the box, and the other end to the inside of the box, that the axis was fixed, and the box was loose upon it. I told him I did not yet thoroughly understand the matter. ' Well, my lad,' says he, ' take a long thin piece of whalebone, hold one end of it fast between your finger and thumb, and wind it round your finger, it will then endeavour to unwind itself ; and if you fix the other end of it to the inside of a small hoop, and leave it to itself, it will turn the hoop round and round, and wind up a

thread tied to the outside of the hoop.' I thanked the gentleman, and told him I understood the thing very well. I then tried to make a watch with wooden wheels, and made the spring of whalebone ; but found that I could not make the watch go when the balance was put on, because the teeth of the wheels were rather too weak to bear the force of a spring sufficient to move the balance ; although the wheels would run fast enough when the balance was taken off. I enclosed the whole in a wooden case very little bigger than a breakfast teacup ; but a clumsy neighbour one day looking at my watch, happened to let it fall, and turning hastily about to pick it up, set his foot upon it, and crushed it all to pieces ; which so provoked my father, that he was almost ready to beat the man, and discouraged me so much that I never attempted to make such another machine again, especially as I was thoroughly convinced I could never make one that would be of any real use.

As soon as I was able to go abroad, I carried my globe, clock, and copies of some other maps besides that of the world, to the late Sir James Dunbar of Durn, about seven miles from where my father lived, as I had heard that Sir James was a very good-natured, friendly, inquisitive gentleman. He received me in a very kind manner, was pleased with what I showed him, and desired I would clean his clocks. This, for the first time, I attempted ; and then began to pick up some money in that way about the country, making Sir James's house my home at his desire.

Two large globular stones stood on the top of his gate ; on one of them I painted with oil colours a map of the terrestrial globe, and on the other a map of the celestial, from a planisphere of the stars which I copied on paper from a celestial globe belonging to a neighbouring gentleman. The poles of the painted globe stood toward the poles of the heavens ; on each the twenty-four hours were placed around the equinoctial, so as to show the time of the day when the sun shone out, by the boundary where the half of the globe at any time enlightened by the sun, was parted from the other half in the shade ; the enlightened parts of the terrestrial globe answering to the like enlightened parts of the earth at all times. So that whenever the sun shone on the globe, one might see to what places the sun was then rising, to what places it was setting, and all the places where it was then day or night, throughout the earth.

During the time I was at Sir James's hospitable house, his sister, the honourable Lady Dipple, came there on a visit, and Sir James introduced me to her. She asked me whether I could draw patterns for needlework on aprons and gowns.

On showing me some, I undertook the work, and drew several for her, some of which were copied from her patterns, and the rest I did according to my own fancy. On this, I was sent for by other ladies in the country, and began to think myself growing very rich by the money I got for such drawings, out of which I had the pleasure of occasionally supplying the wants of my poor father. Yet all this while I could not leave off star-gazing in the nights, and taking the places of the planets among the stars by my above-mentioned thread. By this I could observe how the planets changed their places among the stars, and delineated their paths on the celestial map which I had copied from the above-mentioned celestial globe.

Some time afterwards, Lady Dipple told me that she was to go to Edinburgh next spring, and that if I would go thither, she would give me a year's bed and board at her house, gratis, and make all the interest she could for me among her acquaintance there. I thankfully accepted of her kind offer; and instead of giving me one year, she gave me two. I carried with me a letter of recommendation from the Lord Pitaligo, a near neighbour of Squire Baird's, to Mr John Alexander, a painter in Edinburgh, who allowed me to pass an hour every day at his house, for a month, to copy from his drawings, and said he would teach me to paint in oil-colours if I would serve him seven years, and my friends would maintain me all that time; but this was too much for me to desire them to do, nor did I choose to serve so long. I was then recommended to other painters, but they would do nothing without money; so I was quite at a loss what to do.

In a few days after this, I received a letter of recommendation from my good friend Squire Baird, to the Rev. Dr Robert Keith at Edinburgh, to whom I gave an account of my bad success among the painters there. He told me, that if I would copy from nature, I might do without their assistance, as all the rules for drawing signified but very little when one came to draw from the life; and by what he had seen of my drawings brought from the north, he judged I might succeed very well in drawing pictures from the life, in Indian ink, on vellum. He then sat to me for his own picture, and sent me with it, and a letter of recommendation, to the right honourable the Lady Jane Douglas, who lived with her mother, the Marchioness of Douglas, at Merchiston House, near Edinburgh. Both the marchioness and Lady Jane behaved to me in the most friendly manner, on Dr Keith's account, and sat for their pictures, telling me at the same time that I was in the very room in which Lord Napier invented and computed the logarithms; and that if I thought it would inspire me, I should always

have the same room whenever I came to Merchiston. I staid there several days, and drew several pictures of Lady Jane, of whom it was hard to say whether the greatness of her beauty, or the goodness of her temper and disposition, was the most predominant. She sent these pictures to ladies of her acquaintance, in order to recommend me to them; by which means I soon had as much business as I could possibly manage, so as not only to put a good deal of money in my own pocket, but also to spare what was sufficient to help to supply my father and mother in their old age. Thus a business was put into my hands, which I followed for six-and-twenty years.

Lady Dipple, being a woman of the strictest piety, kept a watchful eye over me at first, and made me give her an exact account at night of what families I had been in throughout the day, and of the money I had received. She took the money each night, desiring I would keep an account of what I had put into her hands; telling me that I should duly have out of it what I wanted for clothes, and to send to my father. But in less than half a year, she told me that she would thenceforth trust me with being my own banker; for she had made a good deal of private inquiry how I had behaved when I was out of her sight through the day, and was satisfied with my conduct.

During my two years' stay at Edinburgh, I somehow took a violent inclination to study anatomy, surgery, and physic, all from reading of books, and conversing with gentlemen on these subjects, which for that time put all thoughts of astronomy out of my mind; and I had no inclination to become acquainted with any one there who taught either mathematics or astronomy, for nothing would serve me but to be a doctor.

At the end of the second year I left Edinburgh, and went to see my father, thinking myself tolerably well qualified to be a physician in that part of the country, and I carried a good deal of medicines, plasters, &c. thither; but to my mortification I soon found that all my medical theories and study were of little use in practice. And then, finding that very few paid me for the medicines they had, and that I was far from being so successful as I could wish, I quite left off that business, and began to think of taking to the more sure one of drawing pictures again. For this purpose I went to Inverness, where I had eight months' business. When I was there, I began to think of astronomy again, and was heartily sorry for having quite neglected it at Edinburgh, where I might have improved my knowledge, by conversing with those who were very able to assist me."

Having spent some time in astronomical pursuits at Inver-

ness, Ferguson returned to Edinburgh, where he made himself known to Mr Maclaurin, professor of mathematics, by whom he was kindly patronised, and instructed on points wherein he was deficient. "One day (continues Ferguson) I requested him to show me his orrery, which he immediately did; I was greatly delighted with the motions of the earth and moon in it, and would gladly have seen the wheelwork, which was concealed in a brass box, and the box and planets above it were surrounded by an armillary sphere. But he told me that he never had opened it; and I could easily perceive that it could not be opened but by the hand of some ingenious clockmaker, and not without a great deal of time and trouble. After a good deal of thinking and calculation, I found that I could contrive the wheelwork for turning the planets in such a machine, and giving them their progressive motions, but should be very well satisfied if I could make an orrery to show the motions of the earth and moon, and of the sun round its axis. I then employed a turner to make me a sufficient number of wheels and axles, according to patterns which I gave him in drawing; and after having cut the teeth in the wheels by a knife, and put the whole together, I found that it answered all my expectations. It showed the sun's motion round its axis, the diurnal and annual motions of the earth on its inclined axis, which kept its parallelism in its whole course round the sun: the motions and phases of the moon, with the retrograde motion of the nodes of her orbit; and, consequently, all the variety of seasons, the different lengths of days and nights, the days of the new and full moons, and eclipses.

When it was all completed except the box that covers the wheels, I showed it to Mr Maclaurin, who commended it in presence of a great many young gentlemen who attended his lectures. He desired me to read them a lecture on it, which I did without any hesitation, seeing I had no reason to be afraid of speaking before a great and good man who was my friend.

I then made a smaller and neater orrery, of which all the wheels were of ivory, and I cut the teeth in them with a file. This was done in the beginning of the year 1743; and in May, that year, I brought it with me to London, where it was soon after bought by Sir Dudley Rider. I have made six orreries since that time, and there are not any two of them in which the wheelwork is alike, for I could never bear to copy one thing of that kind from another, because I still saw there was great room for improvements.

I had a letter of recommendation from Mr Baron Eldon at

Edinburgh, to the right honourable Stephen Poyntz, Esq. at St James's, who had been preceptor to his royal highness the late Duke of Cumberland, and was well known to be possessed of all the good qualities that can adorn a human mind. To me his goodness was really beyond my power of expression; and I had not been a month in London till he informed me that he had written to an eminent professor of mathematics to take me into his house, and give me board and lodging, with all proper instructions to qualify me for teaching a mathematical school he (Mr Poyntz) had in view for me, and would get me settled in it. This I should have liked very well, especially as I began to be tired of drawing pictures; in which, I confess, I never strove to excel, because my mind was still pursuing things more agreeable. He soon after told me, he had just received an answer from the mathematical master, desiring I might be sent immediately to him. On hearing this, I told Mr Poyntz that I did not know how to maintain my wife during the time I must be under the master's tuition. 'What!' says he, 'are you a married man?' I told him I had been so ever since May, in the year 1739. He said he was sorry for it, because it quite defeated his scheme, as the master of the school he had in view for me must be a bachelor.

He then asked me what business I intended to follow. I answered, that I knew of none besides that of drawing pictures. On this he desired me to draw the pictures of his lady and children, that he might show them, in order to recommend me to others; and told me, that when I was out of business I should come to him, and he would find me as much as he could; and I soon found as much as I could execute, but he died in a few years after, to my inexpressible grief.

Soon afterwards, it appeared to me, that although the moon goes round the earth, and that the sun is far on the outside of the moon's orbit, yet the moon's motion must be in a line, that is, always concave towards the sun; and upon making a delineation representing her absolute path in the heavens, I found it to be really so. I then made a simple machine for delineating both her path and the earth's on a long paper laid on the floor. I carried the machine and delineation to the late Martin Folkes, Esq. President of the Royal Society, on a Thursday afternoon. He expressed great satisfaction at seeing it, as it was a new discovery; and took me that evening with him to the Royal Society, where I showed the delineation, and the method of doing it.

In the year 1747, I published a dissertation on the phenomena of the Harvest Moon, with the description of a new orrery, in which there are only four wheels. But having

never had grammatical education, nor time to study the rules of just composition, I acknowledge that I was afraid to put it to the press; and for the same cause I ought to have the same fears still. But having the pleasure to find that this my first work was not ill received, I was emboldened to go on, in publishing my *Astronomy, Mechanical Lectures, Tables and Tracts* relative to several arts and sciences, the *Young Gentleman and Lady's Astronomy*, a small treatise on *Electricity*, and the following sheets.

In the year 1748, I ventured to read lectures on the eclipse of the sun that fell on the 14th of July in that year. Afterwards I began to read astronomical lectures on an orrery which I made, and of which the figures of all the wheelwork are contained in the 6th and 7th plates of this book. I next began to make an apparatus for lectures on mechanics, and gradually increased the apparatus for other parts of experimental philosophy, buying from others what I could not make for myself, till I brought it to its present state. I then entirely left off drawing pictures, and employed myself in the much pleasanter business of reading lectures on mechanics, hydrostatics, hydraulics, pneumatics, electricity, and astronomy; in all which, my encouragement has been greater than I could have expected.

It is now thirty years since I came to London, and during all that time I have met with the highest instances of friendship from all ranks of people, both in town and country, which I do here acknowledge with the utmost respect and gratitude; and particularly the goodness of our present gracious sovereign, who, out of his privy purse, allows me fifty pounds a-year, which is regularly paid without any deduction."

To this narrative we shall add the few particulars which are necessary to complete the view of Ferguson's life and character.

Ferguson was honoured with the royal bounty, which he himself mentions, through the mere zeal of King George III. in behalf of science. His majesty had attended some of the lectures of the ingenious astronomer, and often sent for him, after his accession, to converse upon scientific and curious topics. He had the extraordinary honour of being elected a member of the Royal Society, without paying either the initiatory or the annual fees, which were dispensed with in his case, from a supposition of his being too poor to pay them without inconvenience. From the same idea, many persons gave him very handsome presents. But to the astonishment of all who knew him, he died worth about six thousand pounds. "Ferguson," says Charles Hutton, in his *Mathematical Dictionary*, "must be allowed to have been a very uncommon genius, es-

pecially in mechanical contrivances and inventions, for he constructed many machines himself in a very neat manner. He had also a good taste in astronomy, as well as in natural and experimental philosophy, and was possessed of a happy manner of explaining himself in a clear, easy, and familiar way. His general mathematical knowledge, however, was little or nothing. Of algebra he understood little more than the notation; and he has often told me that he could never demonstrate one proposition in Euclid's Elements; his constant method being to satisfy himself as to the truth of any problem, with a measurement by scale and compasses." He was a man of very clear judgment in any thing that he professed, and of unwearied application to study: benevolent, meek, and innocent in his manners as a child: humble, courteous, and communicative: instead of pedantry, philosophy seemed to produce in him only diffidence and urbanity. After a long and useful life, though unhappy in his family connections, worn out with study, age, and infirmities, he died November 16, 1776.

JAMES BRINDLEY.

THIS celebrated engineer and active promoter of canal navigation in England, was born at Tunsted, in the parish of Wormhill, and county of Derby, in the year 1716. His parents were so extremely poor, that he was totally neglected, and instead of receiving even the ordinary rudiments of education, was forced very early in life to betake himself to those employments usually assigned to the children of the indigent. At the age of seventeen, he bound himself apprentice to Mr Bennet, a millwright, near Macclesfield in Cheshire, and soon became expert at the business. His mechanical abilities, as well as his steadiness and prudence, were displayed to great advantage during his apprenticeship. His master soon learned to depend on his skill and intelligence, and left him for weeks together, to execute works concerning which he had given him no previous instructions. These he finished in his own way, and often with improvements which greatly surprised Mr Bennet, and had that effect on the millers, that they always chose him again, in preference to the master or any other workman. Before the expiration of his servitude, Mr Bennet became too old to work, but young Brindley kept up the business with reputation and credit, and supported the old man and his family in a comfortable manner.

An instance of the activity and earnestness of his mind in mechanical pursuits, is mentioned to his honour. His master was employed to build the first engine paper-mill in these parts, which he began, after having visited and inspected a mill of the same kind. When some progress had been made in the work, another millwright, who happened to travel that way, informed the people in the neighbourhood that Mr Bennet would never perform the intended effect, but was throwing his employer's money away. This news being communicated to Brindley, who was aware that he could not depend upon his master's report, he determined to see the original mill himself. For this purpose he departed on Saturday evening, without acquainting any one of his intentions, travelled fifty miles on foot, took a view of the mill, and returned in time for his work on Monday morning. The information he communicated to Mr Bennet enabled him to complete the work to the satisfaction of his employers; besides which, he considerably improved the paper-press.

At the end of his apprenticeship, Mr Brindley set up as a millwright, and improved this useful business by so many inventions and contrivances, that he became highly esteemed, and his reputation gradually extended itself into the surrounding country. Other business of greater novelty and importance began to be entrusted to him. But from his ordinary pursuits as a skilful engineer, he was now withdrawn to execute an undertaking which led to results of the highest national importance. Francis Duke of Bridgewater, while yet much under age, had succeeded, in 1748, to the family title and estates which had been first enjoyed by his father. This young and enterprising nobleman had a property at Worsley, about seven miles west from Manchester, extremely rich in coal mines, which, however, had hitherto been unproductive, owing to the want of any economical means of transport. Seeing the necessity of a canal from Worsley to Manchester, he consulted Mr Brindley, as a person capable of carrying his design into effect. After surveying the ground, Brindley declared the scheme to be practicable, and an act of Parliament was therefore obtained in the years 1758 and 1759, for enabling his grace to cut a canal from Worsley to Salford (Salford is a town lying opposite to Manchester, on the north side of the Irwell), and to carry the same to or near Hollin Ferry. It was afterwards, however, perceived that the navigation would be more advantageous to the public, as well as to the undertaker, if carried over the river Irwell, near Barton Bridge, to Manchester; in consequence of which, his grace procured another act to empower him to proceed according to this new

plan, and also to extend a branch to Longford Bridge in Stratford. Mr Brindley's plan was the first of its kind in the kingdom, and is truly honourable to his employer as well as himself. It was resolved that the canal should be on the same level throughout, and, consequently, free from the usual obstructions of locks. On the immediate view of a plan so bold, many difficulties must doubtless present themselves, and to many, these difficulties would have appeared insurmountable. Local circumstances required the canal to be carried over rivers and very large and deep vallies, where the requisite structures seemed to demand ages for their completion. It also appeared by no means the least of the difficulties, to ascertain whence the requisite quantity of water could be drawn even on his improved plan. The peculiar strength of mind of Brindley, supported by the unbounded confidence and the fortune of his employer, was required to combat not only these difficulties, but the equally formidable impediments arising from the passions, the prejudices, and the interests, of men. All these were surmounted by efforts of genius so masterly, and by contrivances of efficacy so striking, that malevolence had no other resource than to represent that task as easy which it had before declared impracticable.

The experimental result of this enterprise, added to his own reflections, convinced the Duke of Bridgewater, more and more, of the advantages, as well public as private, of inland navigation. He therefore turned his thoughts to the extension of his canal to Liverpool. Difficulties from men, as well as from local circumstances, were here again to be encountered, but the perseverance and conduct of his grace surmounted all opposition, and an act of Parliament was obtained in 1762, for branching his canal to the tideway in the Mersey. This portion of the canal, which is upwards of twenty-nine miles in length, is, like the former, without locks, and is carried over many large and deep vallies. But all difficulties were here also successfully overcome by the genius and economical plans of Brindley. It may here be stated, that since the cutting of these canals, many improvements and extensions have been made, so as to render the Duke of Bridgewater's canal property the most profitable of its kind in Great Britain. The enterprising nobleman who originated these great undertakings, spared no pains to bring them to completion. He voluntarily relinquished every thing like an establishment corresponding to his rank, devoting very nearly the whole of his revenues to this great public work. His grace lived to reap the reward of his labours and privations; at his death, in 1803, it was understood that the income arising

from his canal property was between L.50,000 and L.80,000 per annum.

The success of the Duke of Bridgewater's undertakings soon gave rise to a number of similar works of public and private utility, and from this period, 1765, may be dated the commencement of that extended canal navigation which now forms so important a part of the means of internal communication in England and Scotland. Brindley's unrivalled hardihood and fertility of genius having pointed him out as the only man in the country apparently able to construct canals on a great scale, especially when difficulties were to be overcome, he was applied to by a number of gentlemen and manufacturers in Staffordshire, to form a canal through that part of the country—an undertaking formerly abandoned as impracticable. Mr Brindley having surveyed the ground betwixt the Trent and Mersey, and reported that it was practicable to unite these two rivers, and, consequently, the ports of Liverpool and Hull, by a canal, a subscription was set on foot in 1765, and an act of Parliament obtained the same year. The proprietors called this canal "the Canal from the Trent to the Mersey," but the engineer called it the Grand Trunk Navigation, on account of the numerous branches which he concluded would be extended every way from it. It was begun in 1766, and continued during the remainder of his life. He left it to be completed by his brother-in-law, Mr Henshall, who saw it finished in May 1777, being not quite eleven years after its commencement. This canal is ninety-three miles in length, extending through a populous country, with seventy-six locks and five tunnels. The most remarkable of the tunnels is that through Air-Castle-hill, which is 2880 yards in length, and more than seventy yards below the surface of the earth. This hill constituted the great obstacle, which could neither be avoided nor overcome by any expedient the ablest engineers before his time could devise.

About the time this great undertaking was begun, an act was obtained by the gentlemen of Staffordshire and Worcestershire to construct a canal from the Grand Trunk, near Haywood, in Staffordshire, to the river Severn, near Bewdley, by which means the port of Bristol was connected by inland navigation with the two ports of Liverpool and Hull. Mr Brindley was appointed engineer to this canal, which is about forty-six miles in length, and was completed in 1772. His next undertaking was the survey and execution of a canal, twenty-six miles in length, from Birmingham to the last-mentioned canal near Wolverhampton. It was finished in about three years, and must have been productive of the great-

est advantages to manufactures and commerce, by the conveyance of vast quantities of coal to the river Severn, and to Birmingham, where the demand is very great. After this period he constructed many other canals in the central and other parts of England, and few works of this kind were undertaken in the kingdom, without his previous advice and consultation. He likewise, from time to time, suggested important improvements in his capacity of engineer, which have proved of considerable utility.

It is related that Brindley pursued all his wonderful plans in a way entirely peculiar to himself. When any extraordinary difficulty occurred to him in the course of his business, he generally retired to his bed, to meditate on the expedients and means by which he might accomplish his object. He has been known to lie in bed on such occasions for one, two, or three days, after which he arose and executed his design without any drawing or model. He never made either, unless when obliged to do so for the satisfaction of his employers. The tenacity of his memory was such, that he has often declared he could remember and execute all the parts of the most complex machine, provided he had time to settle the several departments in his mind, and their relations to each other. His process for calculating the powers of machinery was mental, and performed by steps which it does not appear that he had ever sufficient inducements to communicate, or his friends to acquire. After certain intervals of consideration, he noted the result in figures, and thence proceeded to operate upon that result, until at length the solution was obtained, which generally proved right. It has been affirmed that he could neither read nor write, and that his language and manner were poor and unimpressive. But these assertions do not appear to be well founded. That he read little, is certain; and though he must have written less, yet it is well known that he wrote letters to his friends. With regard to his appearance, as he was no friend to ostentation, his clothing was altogether plain.

The want of literature in Brindley compelled him to cultivate the art of memory, which is greatly neglected by men who depend on reading, writing, and drawing, for assistance. Yet, in this respect, as all men have not the natural memory of Brindley, his example cannot be followed to its fullest extent with advantage. The very intensity of thought necessary to complete his plans, acted most detrimentally upon his health, and, consequently, on his utility. Had he relaxed his mind by varying his pursuits, he might have prolonged his valuable existence. His intense application, and the multi-

plidity of engagements which he was prevailed on to accept, brought on a hectic fever, which continued with little or no intermission for several of the last years of his life, and at length terminated his useful and honourable career, on the 27th of September 1772, in the fifty-sixth year of his age.

GEORGE CUVIER.

GEORGE CUVIER, the most eminent naturalist of modern times, was born August 23, 1769. The place of his nativity was the little town of Montbéliard, in Switzerland, formerly the capital of the district so called, and which, up till 1796, formed part of the German domain of the Duke of Wurtemberg. His father was a distinguished officer in a Swiss corps in the pay of France, and who, after forty years' service, retired to his native town with a small pension and a military title of honour. He there espoused a young lady of good family, to whose admirable management and superintendence the future eminence, if not indeed the very existence, of George Cuvier, who was the second son, is mainly to be attributed. He was of an extremely delicate constitution, and, equally with the view of strengthening his body and enlightening his mind, she directed his attention to the beauties of outward nature. To the latest day of his life, Cuvier cherished, with a lively fondness, every reminiscence of this excellent woman, and in his later years, when immersed in the toils of legislation and science, expressed the warmest gratitude to any one who brought him a bouquet of the flowers which his mother had more especially loved. Under her instructions alone, Cuvier was taught to read with facility when only four years of age. She also instructed him in sketching, while she fostered in every way the desire for solid information which he so early manifested, by procuring a supply of historical and scientific works, calculated to expand his youthful mind. When he became of age to learn Latin, she not only attended him to and from the school personally, but even undertook the superintendence of his daily lessons, and had the satisfaction of finding that he maintained a superiority over all his schoolfellows. When ten years old, Cuvier was removed to a higher school, called the Gymnase, where his progress attracted particular attention. He was singularly diligent and thoughtful, with a memory of uncommon retention. But the author who attracted all his regard in his leisure moments, was Buffon, the whole of whose plates, even

at this early age, he faithfully copied and coloured, manifesting at the same time the most extraordinary aptitude for mastering the driest details of nomenclature. His acquisition of the dead languages, mathematics, and geography, was not less remarkable, and he pursued all these studies with an ardour that would seem incompatible with the indulgence of childish sports.

Cuvier was destined for the church, and from the poverty of his parents, became a candidate for admission to the free school of Tübingen. In this competition he composed and delivered a poetical oration on the prosperity of the principality, which he is said to have recited with astonishing effect; but from the base treachery of his master in the Gymnase, he lost the just reward of his able composition. His merits, however, had now become so conspicuous as to attract the notice of Duke Charles, uncle of the king of Wurtemberg, who, upon an interview with him, became so much interested in his welfare, that he sent him, upon his own (Duke Charles's) charges, to the *Académie Caroline* at Stuttgart, a seminary founded by the duke himself, and in which he took the deepest interest. This was in 1784, when Cuvier had entered his fifteenth year. His various talents, or rather his unbounded capacity, had now the means of expanding itself upon the wide range of studies afforded to its exercise. The pupils were instructed in almost every branch of knowledge, but more particularly those connected with civil polity; and many of them became in after years the ministers not only of the various courts of Germany, but even of Russia and other states. Cuvier was inferior to none in the ready acquisition of every subject of study; but amidst all his occupations, that of natural history was pursued with an ardour that increased in proportion to the means of self-instruction which he possessed. He read Linnæus, Reinhart, and all the other best authors; inspected all the museums within his reach; collected specimens; and drew and coloured insects, birds, and plants, in his hours of recreation. Even then he began to perceive the great advantages which the study of entomology (anatomy of insects) would lend to his future investigations, while its prosecution led to the acquisition of habits of minute observation.

Cuvier had only been four years at Stuttgart (during which time, however, he had won many marks of distinction—amongst others the order of *chevalerie*, which was only granted to five or six of the pupils out of four hundred), when the disturbed condition of France and Germany, occasioning the departure of his patron and the discontinuance of his father's pension, obliged him to leave that seminary; and he took what appeared to his companions to be the desperate resolution of becoming

tutor in a private family—that of Count d'Héricy, a Protestant nobleman, with whom he removed to Caen, in Normandy, in July 1788. Change of residence, society, and circumstances, however, could not for a moment damp the persevering assiduity of Cuvier, and the transition from an inland to a maritime situation only contributed to direct his active mind into new channels of study and investigation. He here began to study the anatomy of fishes, compare fossil with recent species, and from their dissection was conducted to the developement of his great views on the whole of the animal kingdom, by which he subsequently read the physical history of creation through all its phases, as in a book. Whilst engaged in making records of his observations simply for his own guidance and use, he was unwittingly rectifying the mistakes and oversights of all preceding and contemporary naturalists.

Nearly six years passed over Cuvier's head thus usefully and tranquilly employed, whilst France was undergoing the dreadful ordeal of the revolution. But its impulse at last reached his retreat. A society or union, like those which were organised by the populace throughout every other part of the empire, and which armed the inhabitants against themselves, was about to be established at the neighbouring town of Fécamp, when Cuvier, who perceived the impending danger, prevailed on his employer and the neighbouring landholders to anticipate its formation, by constituting the society themselves. Of this body Cuvier was appointed secretary, and the members, instead of discussing sanguinary affairs at their meetings, devoted their attention solely to the consideration of agriculture. At one of these meetings a speech was delivered by a venerable-looking individual, who resided in the neighbourhood under the character of a surgeon. Cuvier, however, although he had never seen him before, quickly recognised in the speaker the author of certain valuable articles on agriculture in the *Encyclopédie Méthodique*, and approaching him after the sitting was finished, he addressed him as the Abbé Tessier. The old man was at first much alarmed, for he had fled from Paris and concealed himself under his present disguise, to avoid the common doom of all who then bore the hated name of Abbé; but Cuvier soon quieted his fears, and they became thenceforward the most intimate friends. Tessier perceived at once the extraordinary talents and acquirements of his new acquaintance. "At the sight of this young man," he wrote to his friend Jussieu, "I felt the same delight as the philosopher, who, when cast upon an unknown shore, there saw traces of geometrical figures. M. Cuvier is a violet which was concealed among common herbs. He has great acquire-

ments ; he draws plates for your work, and I have urged on him to give botanical lectures this summer. He has consented to do so, and I congratulate the students on the fact, for he demonstrates with great method and clearness. I doubt if there is to be found a better comparative anatomist ; he is indeed a pearl worth the picking up. I contributed to draw M. Delambre from his retreat ; do you now help me to draw M. Cuvier from his, for he is made for science and the world." The immediate result of these warm recommendations was the transmission of some of Cuvier's papers to Paris, where their great value was properly appreciated ; and in a few months afterwards he was appointed colleague of M. Mertreid in the newly created chair of comparative anatomy at Paris, whither he removed, being then only twenty-six years of age.

Cuvier's first thoughts, on finding himself placed in a respectable and permanent situation, were for his distressed relatives. His mother was then dead, but he invited his father and brother to come and live with him ; and after seeing them comfortably settled, he applied himself to his favourite studies with a zeal that nothing could repress. He was every where heard with delight and conviction, for he had already, before coming to Paris, adopted those extensive views, and arrived at those profound and sagacious conclusions, which guided his investigations into physical nature, and shook to their base all the then existing systems of Linnæus and other naturalists. Besides his public lectures and private pursuits, he published, during the first year of his residence at Paris, more than half a dozen treatises on various subjects of natural history, in which the most expanded views were combined with evidence of the minutest accuracy and arrangement. He especially impressed on his pupils the importance of entomological study. A young medical student came to him upon a certain occasion, full of a discovery he supposed himself to have made in dissecting a human body. Cuvier immediately asked him if he was an entomologist, to which the other replied in the negative. "Go, then, and anatomise an insect," said Cuvier, "and then reconsider the discovery you have made." The young man did so, and returned to Cuvier to confess his error. "Now," said Cuvier, "you see the value of my touchstone." His discovery of the red blood of the leech, and the other animals which he grouped in the class *Annelides*, was made in 1796 ; and in 1797 he read his celebrated memoir on the nutrition of insects, in which he showed the manner in which respiration was carried on by tracheæ, and how the nutritious fluid diffused itself over the whole internal surface of the body, so as to be every where absorbed.

While absent on this duty, Napoleon made the secretaryship of the class of physical and mathematical sciences perpetual, with a salary of six thousand francs.

In 1803, Cuvier married Madame Duvancel, the widow of a fermier-general who was guillotined in the year 1794, and who brought four young children home with her. Madame Cuvier appears to have been an admirable woman, and to have proved an invaluable blessing to her husband. She bore him four children, all of whom, as well as his stepchildren, were successively taken from him by death, excepting one of the latter. In 1808, Cuvier was appointed one of the councillors, for life, of the New Imperial University; and Bonaparte (now emperor) about the same time employed him to write a history of the progress of the human mind from the year 1789. Of this work, to which Cuvier applied himself with his usual ardour, Baron Pasquier says, "We were present when it was read to the emperor in the council of state, and such scenes are never effaced from the memory. Napoleon had asked merely a report, and under that unassuming title, the skilful reporter had raised a monument, which stands like a Pharos between two ages, showing at once the road that had been traversed, and that which still ought to be pursued." His situation as university councillor brought him frequently into the emperor's presence to discuss affairs of administration. During the years 1809 and 1810, he was appointed to organise the academies of the Italian states. In 1811, he was employed to form academies in Holland and the Hanseatic towns. Upon these duties he entered with all the enthusiasm of his benevolent mind, and no employment could have been more delightful. Napoleon was so much pleased with the manner in which he discharged his task, that he conferred on him the title of Chevalier, and also named him in 1813 master of requests in the council of state. During these various tours, Cuvier prosecuted his study of natural history unremittingly.

The extraordinary talents of Cuvier, blended as they were with so much dignity of character and so much experience, were indispensable to France under all the successive changes of government which happened during his lifetime. The consulate, the imperial government, the restoration, the monarchy of July, did but anew direct public attention to the civil services of a man whose attainments and whose sagacity were for all time. He was the favoured, admired, esteemed, of all parties, and yet independent. Undistracted by all the changes that befell his country, he was ever occupied with her best interests, and endeavouring to diffuse that mental and moral preparation, without which he well knew the political rights

she so urgently sought would prove the reverse of blessings. After the restoration, Louis XVIII. bestowed on him the dignity of councillor of state, and he was thus called on to take a considerable share in the internal administration of his country, as president of the committee of the interior, an office which involved him in endless details of business. In 1818, he visited England for six weeks, and during his absence from Paris, had the distinguished honour of being created one of the forty of the Académie Française. In 1819, he was named grand-master of the university, and in the same year was created a baron. In 1826, Charles X. bestowed on him the decoration of grand officer of the legion of honour; and his old sovereign, the king of Wurtemberg, about the same time made him commander of the order of the crown. During the same year, he lost the favour of the court by steadily refusing the appointment of censor of the press; but he incurred a much heavier dispensation in the loss of his only remaining child Clementine, a beautiful young woman, on the eve of marriage. In 1830, he again visited England along with his stepdaughter Mademoiselle Duvancel, and they happened to be in London during the revolution of the barricades. On his return to Paris, Cuvier was most graciously received by Louis Philippe, by whom he was, in 1832, created a peer of France. But he lived not long to enjoy his dignity. On the 9th May he was attacked by partial paralysis in his arms, and aware in what it was to terminate, made his will, and arranged some important matters with the most perfect calmness. On the 11th, his legs were paralysed, but so powerful was the love of science within him, that he sought to illustrate a paper which he had previously read in the Institute, by reference to his own case, saying, "It is the nerves of the will that are affected," alluding to the distinction between the nerves of the will and those of sensibility, and the discoveries of Sir Charles Bell and Scarpa. To M. Pasquier, who saw him on the 12th, he remarked, "I had great things still to do. All was ready in my head. After thirty years of labour and research, these remained but to write, and now the hands fail and carry with them the head." On the 13th, after vainly trying to swallow a mouthful of lemonade, he gave the draught to his stepdaughter to drink, saying it was delightful to see those he loved still able to swallow. After which affectionate remark, he calmly expired.

Cuvier was an uncommonly fine-looking man, both in person and features, his countenance being indicative of that talent and intelligence by which he was distinguished. His manner was noble and dignified; he was kind and conciliatory to all;

and his charity and benevolence were unbounded. His application was prodigious. He was never without occupation, and his only relaxation was in the change of his objects of business or study. Amid the multifarious occupations out of his house, if he had only a quarter of an hour to spare before dinner on his return, he availed himself of it to resume some composition interrupted since the night before on some scientific subject. During his drives through the city, he read and even wrote in his carriage, having a desk fitted up in it for that purpose. He dined betwixt six and seven, after which, if he did not go out, he immediately retired to his study, where he continued till ten or eleven. His extreme facility for study, and of directing all the powers of his mind to diverse occupations of study, from one quarter of an hour to another, was one of the most extraordinary qualities of his mind ; and we will conclude our notice of this great man by observing, that the habit he had acquired of never being idle, of being undisturbed by interruptions, and of returning to unfinished labours as if no such interruptions had occurred, was shown in his instance to be so valuable, that if it is to be acquired by those who do not naturally possess it, it merits the strongest efforts of the mind for its attainment.

MUNGO PARK.

THIS celebrated man, whose enthusiastic ardour, important achievements, and unhappy fate in the cause of African discovery, have invested his name with a deathless fame, was the son of a respectable farmer at Fowlshiels, in the county of Selkirk, in the south of Scotland, and was born at his father's house on the 10th September 1771. He was the seventh of a family of thirteen children ; yet, notwithstanding that his father was by no means in easy or independent circumstances, he, with the rest, enjoyed the benefit of an excellent education, by means of a private tutor engaged to reside in the family. Mungo was afterwards sent to the grammar school of Selkirk, where he made astonishing progress, not so much by his ready talents, as by his remarkable perseverance and application ; and, despite of many disadvantages, uniformly kept the place of dux, or head of his class. This early devotion to study and aptitude of acquirement, together with his thoughtful and reserved disposition, seemed to his

father to point out the church as his future profession; but upon his son's expressing a decided preference for that of medicine, he at once agreed, and bound him apprentice for three years to Mr Thomas Anderson, surgeon in Selkirk. At the expiry of his indenture in 1789, being then eighteen years of age, he went to Edinburgh, and attended the classes for three successive sessions, continuing to exhibit the same thirst of knowledge, and unwearied application to all the studies connected with his profession, particularly botany. In the latter, he is said to have been greatly assisted and encouraged by a brother-in-law, Mr James Dickson, who, from an origin even more humble and obscure than that of Park himself, subsequently raised himself to fame and fortune, and became celebrated as one of the first botanists in the kingdom. He had gone to London in search of employment as a journeyman gardener, and procured an engagement, in that humble capacity, with a nurseryman at Hammersmith, where he had the good fortune to attract the notice of Sir Joseph Banks, through whose kind friendship and patronage he was mainly indebted for his future success and celebrity.

After qualifying himself in his profession at Edinburgh, young Park went to London in search of employment, and was very speedily appointed assistant-surgeon on board the Worcester, East Indiaman, through the interest of Sir Joseph Banks, to whom Mr Dickson had introduced him. Mr Park showed himself every way worthy of this appointment, and made an adequate return to his distinguished patron, by the valuable observations and discoveries he made in botany, and other branches of natural history, in a voyage to Bencoolen, in the island of Sumatra. On his return in 1794, being then only twenty-three years old, he had the honour of reading a paper before the Linnæan Society in London, giving a description of eight new species of fishes he had observed in Sumatra, which was afterwards published in the Transactions of the society.

After leaving the Worcester, Mr Park appears to have had no certain or fixed views as to his future career, but his talents and genius had already distinguished him too much to allow him to remain long unemployed. The wealthy and scientific Association for the Promotion of Discovery through the Interior of Africa, were at that time preparing to send out an expedition, with the view of endeavouring to trace the course of the Niger, and procuring every information relative to the great central city of Tombuctoo, of which little more than the name was then known. Sir Joseph Banks, one of the leading men of the association, immediately pointed out Park as one

peculiarly eligible for taking the management of the expedition, and the offer being accordingly made to him, was eagerly accepted. He immediately prepared himself, therefore, for the task, being liberally supplied, according to his own statement, with the means of furnishing himself with every thing he reckoned necessary, and sailed from Portsmouth on the 22d of May 1795, in the brig *Endeavour*. His instructions were, to proceed to the Niger by the nearest and most convenient route, and endeavour to trace its course, from its rise to its termination; as also to visit, if possible, all the principal towns and cities on its banks, particularly Tombuctoo and Housa, and afterwards return to Europe by the river Gambia, or any other way he thought most advisable. He arrived at Jillifica, in the kingdom of Barra, and lying on the northern bank of the Gambia, on the 21st of June; and after proceeding up the river as far as Jonkakonda, he quitted the *Endeavour*, and proceeded by land to a small British factory, which had been established at Pisania, in the king of Yam's territories, where he took up his residence for a short time with Dr Laidley. He immediately applied himself to the study of the Mandingo tongue, and to collect all the information possible, relative to the various people and countries in the interior, preparatory to his journey. In consequence, however, of exposure to the night dew, while observing an eclipse of the moon, in the month of July, he was seized with fever, attended with delirium, which brought him almost to the brink of the grave; nor was he sufficiently recovered to commence his journey till December. On the 2d of that month he set out, having for his escort a negro servant, named Johnson, who had resided many years in Great Britain, and understood both the English and Mandingo languages, as a guide and interpreter; a negro boy belonging to Dr Laidley, and whom that gentleman promised to set free on his return, in the event of his good conduct; with four others, not immediately under his control, but who were made to understand that their own safety depended upon their fidelity to him. It may be interesting also to notice the nature and value of his equipments for a journey of such length, peril, and importance. These consisted of a horse for himself, two asses for his servants, provisions for two days, a small assortment of beads, amber, and tobacco, a few changes of linen and other apparel, an umbrella, a pocket sextant, a magnetic compass, a thermometer, two fowling-pieces, two pairs of pistols, and a few other trifling articles. Such were all the means of sustenance, comfort, and safety, with which this intrepid man was provided for an expedition, the duration of which it was out of his power to calculate, but whose route,

he well knew, lay, in some places, through pathless deserts, where neither tree grew nor water ran, and beset with beasts of prey—in others, through the territories of barbarous tribes, from whose inhospitality or savage dispositions he had scarcely less to fear.

At the very outset, an event occurred which seemed to bode ill for the result of his journey. Dr Laidley, and a few others of the Europeans at Pisanía, having escorted him during the first two days, bade him adieu, convinced that they would never see him more; and scarcely were they out of sight, when he was surrounded by a horde of native banditti, from whom he only got free by surrendering the greater part of his small store of tobacco. Park, however, was not a man to be depressed by evil auguries; and he accordingly pushed on to Medina, the capital of Woollí, where the king, a benevolent old man, received him with much kindness, and furnished him with a trusty guide to the frontiers of his dominions. Our traveller then engaged three elephant hunters, as guides and water-bearers, through the sandy desert which lay before him, where water was frequently not to be found for several days together. He performed the journey in safety, but after much fatigue, and reached Fátteconda, the residence of the king of Bondon, situated upon the very frontiers of his dominions, adjoining the kingdom of Kajaaga. It was at Fátteconda, and at the hands of the same chief, that Park's predecessor in enterprise, Major Houghton, had received such ill usage, and was plundered of almost every thing he possessed; but the only article he exacted from Park, and that not by force, but by such warm and animated expressions of admiration as left our traveller no alternative to choose, was his new blue coat, with gilt buttons, in return for which he presented him with five drachms of gold. From Fátteconda he proceeded to Joag, the frontier town of Kajaaga, travelling in the nighttime for fear of robbers, and through thickets abounding with wolves and hyenas, which glided across their silent path in the clear moonshine, and hung round the small party with yells and howlings, as if watching an opportunity to spring upon them. At Joag, and whilst preparing to proceed on his journey, he was honoured by a visit from the king's son, who plundered him of the half of his little stores, on pretence of his having forfeited all his property, by entering the kingdom without leave. As a sort of consolation for this disaster, and whilst appeasing his hunger with a few ground nuts which a poor negro slave had given him in charity, he was waited upon by the nephew of the king of Kasson, who had been at Kajaaga on an embassy, and who, taking pity on him, offered to escort him to

his uncle's capital, to which he was now returning, and which lay in the line of our traveller's route. After crossing the river Senegal, however, which was the boundary of Kasson, his royal guide left him, having first taken from him the half of the little property he had left. A few days after this, Park, for the first time, had an opportunity of observing the manners of the barbarous and untutored natives of Africa in all their primitive simplicity and unchecked ardour. They came to a village which was the birthplace of one of his faithful escort, a blacksmith, that had accompanied him from Pisania, and who was now about to leave him, having amassed a considerable deal of money in his profession on the coast, and resolving to spend the rest of his days in ease and independence amongst his family and friends. The meeting which ensued was characterised by the most extravagant demonstrations of joy and triumph, and Park was convinced, that "whatever difference there is between the Negro and European, in the conformation of the nose, and the colour of the skin, there is none in the genuine sympathies and characteristic feelings of our common nature." With these warm-hearted villagers our traveller rested for a day or two, and then proceeded to Kooniakary, where the king, a fine old man, who was greatly beloved by his subjects, received him with much kindness. From this point new perils beset Mr Park's further progress, in consequence of war breaking out between the people of Bambarra, to which kingdom his course was directed, and other tribes, through whose territories he had to pass on his way thither. He nevertheless persevered, although even his faithful negro Johnson, who was aware of the dangers he was running into, refused to accompany him farther. They parted accordingly at Jarra, in the kingdom of Ludimar (the people of which, as well as of the neighbouring nations, were found to be Mahomedans), and Mr Park, having entrusted Johnson with a copy of his journal to carry back with him to Pisania, set out for the camp of Ali at Benownm, accompanied only by Dr Laidley's slave-boy, and a messenger who had arrived from Ali to conduct him thither. On the way he suffered great privations, and was repeatedly beaten and robbed by the fanatical Moors, to whom he was an object of peculiar detestation as a Christian. All the sufferings and insults which he had yet undergone, however, were nothing to what he was doomed to endure while in the power of the tyrant Ali. His appearance at Benownm excited the greatest astonishment and consternation amongst the inhabitants, scarcely one of whom had ever seen a white man before. When taken before Ali, the latter was engaged in the dignified occupation of clipping his beard with a pair of

scissors, and paid little regard to him ; but the ladies of the court fully maintained the character of their sex for inquisitiveness, searched his pockets, opened his waistcoat to examine his white skin, and even counted his toes and fingers to make sure of his being human.

It would occupy far more space than the limits of our work will permit, to detail the innumerable and unremitting sufferings of our unfortunate countryman during his detention at this place. The unfeeling tyrant would neither permit him to depart, nor grant him any protection from the persecution of the fanatical rabble. He was beat, reviled, compelled to perform the meanest offices, frequently on the point of starvation, and was often necessitated to sleep in the open air. All his baggage was taken from him to deter him from running away, with the exception of a pocket compass, which was supposed to be the work of magic, from the needle always pointing in the same direction, and was therefore returned to him. At last it began to be debated how he was to be disposed of—some advising that he should be put to death, others, that his right hand should be cut off, and another party, that his eyes should be put out. Park's health at length gave way under the accumulated horrors of his situation, and he was seized with a fever and delirium, which brought him to the brink of the grave. Yet even in this extremity, his persecutors never desisted from their cruelties, and tormented him like some obnoxious animal, for their amusement. Perhaps the strongest proof that can be given of the extent of his sufferings at this time, and of the deep and lasting impression they made on his mind, is the fact, that years afterwards, subsequent to his return to Scotland, and while residing with his family on the peaceful banks of the Tweed, he frequently started up in horror from his sleep, imagining himself still in the camp of Ali at Benowm. But perhaps nothing gave our traveller so much permanent grief as the fate of his faithful slave-boy Demba, whom Ali impressed into his service as a soldier, and who had conceived a great affection for Mr Park, who describes their parting as very affecting.

After a month's residence at Benowm, Ali removed to Jarra, back to which place, of course, Mr Park was obliged to accompany him. Here all was alarm and terror, from the approach and apprehended attack of the king of Kaarta ; and amid the bustle and confusion of the inhabitants flying from their homes, the preparations for war, &c., Mr Park at last, after great difficulty, and amid many perils, found an opportunity of escaping, and struck into the woods back towards Bambarra. Being under the necessity of avoiding all inter-

course with the natives, in order to avoid being recaptured by the emissaries of Ali, who were in pursuit of him, he was at one time nearly famished in the wilderness, and we will take his own account of his sensations at this awful crisis. Thirst, intense and burning thirst, was the first and direst of his sufferings; his mouth and throat became parched and inflamed, and a sudden dimness frequently came over his eyes, accompanied with symptoms of fainting. The leaves of the few shrubs that grew around were all too bitter for chewing. After climbing up a tree in the hopes of discovering some signs of a human habitation, but without success, he again descended in despair. "As I was now," says he, "too faint to attempt walking, and my horse too fatigued to carry me, I thought it but an act of humanity, and perhaps the last I should ever have it in my power to perform, to take off his bridle, and let him shift for himself, in doing which, I was affected with sickness and giddiness, and, falling upon the sand, felt as if the hour of death was fast approaching. Here then, thought I, after a short but ineffectual struggle, terminate all my hopes of being useful in my day and generation; here must the short span of my life come to an end. I cast, as I believed, a last look on the surrounding scene; and whilst I reflected on the awful change that was about to take place, this world and its enjoyments seemed to vanish from my recollection. Nature, however, at length resumed her functions; and, on recovering my senses, I found myself stretched upon the sand, with the bridle still in my hand, and the sun just sinking behind the trees. I now summoned all my resolution, and determined to make another effort to prolong my existence; and as the evening was somewhat cool, I resolved to travel as far as my limbs would carry me, in hopes of reaching (my only resource) a watering place. With this view I put the bridle upon my horse, and, driving him before me, went slowly along for about an hour, when I perceived some lightning from the north-east; a most delightful sight, for it promised rain. The darkness and lightning increased very rapidly, and, in less than hour, I heard the wind roaring behind the bushes. I had already opened my mouth to receive the refreshing drops which I expected, but I was instantly covered with a cloud of sand, driven with such force by the wind, as to give a very disagreeable sensation to my face and arms; and I was obliged to mount my horse, and stop under a bush, to avoid being suffocated. The sand continued to fly for nearly an hour in amazing quantities, after which I again set forwards, and travelled with difficulty until ten o'clock. At this time I was agreeably surprised by some

very vivid flashes of lightning, followed by a few heavy drops of rain. I alighted, and spread out all my clean clothes to collect the rain, which at length I saw would certainly fall. For more than an hour it rained plentifully, and I quenched my thirst by wringing and sucking my clothes."

Park at length entered the kingdom of Bambarra, where he found the people hospitable, and was astonished at the opulence and extent of cultivation he every where found. The country, he says, was beautiful, intersected on all sides by rivulets, which, after a rain-storm, were swelled into rapid streams. He was, however, such an object of amusement and ridicule to the inhabitants, from his own tattered condition, together with the appearance of his horse, which was a perfect skeleton, and which he drove before him, that the very slaves, he says, were ashamed to be seen in his company. Notwithstanding all this, however, he held on his way, and at last, on the 21st day of July (1796), had the inexpressible gratification of coming in sight of Sego, the capital of Bambarra, situated on the Niger, which the natives denominated Jolibá, or the "Great Water."

"As we approached the town," says Park, "I was fortunate enough to overtake the fugitive Kaartans, and we rode together through some marshy ground, where, as I anxiously looked around for the river, one of them called out *Geo affili* (see the water). Looking forwards, I saw, with infinite pleasure, the great object of my mission, the long sought for majestic Niger, glittering to the morning sun, as broad as the Thames at Westminster, and flowing slowly *to the eastward*. I hastened to the brink, and having drunk of the water, lifted up my fervent thanks in prayer to the Great Ruler of all things, for having thus far crowned my endeavours with success."

Sego consisted of four distinct towns, two on the northern and two on the southern bank of the Niger; "and the view of this extensive capital," says our traveller, "the numerous canoes on the river, the crowded population, and the cultivated state of the surrounding country, formed altogether a prospect of civilisation and magnificence which I little expected to find in the bosom of Africa." The king, Mansong, however, refused to see Mr Park, for fear of exciting the envy and jealousy of the Moorish inhabitants, and ordered him to remove to a village in the vicinity. He had no alternative but to comply; and it was here that one of those fine traits of female compassion occurred, to which he has frequently borne testimony with thankfulness and gratitude; and this truly affecting incident we cannot refrain from giving in his own simple language.

On arriving at the village, he was inhospitably driven from every door, with marks of fear and astonishment. He passed the day without victuals, and was preparing to spend the night under a tree, exposed to the rain and the fury of the wild beasts, which there greatly abounded, "when a woman, returning from the labours of the field, stopped to observe me, and perceiving me weary and dejected, inquired into my situation, which I briefly explained to her; whereupon, with looks of great compassion, she took up my saddle and bridle, and told me to follow her. Having conducted me into her hut, she lighted up a lamp, spread a mat upon the floor, and told me I might remain there for the night. Finding that I was very hungry, she said she would procure me something to eat; she accordingly went out, and returned in a short time with a very fine fish, which having caused to be broiled upon some embers, she gave me for supper. The rites of hospitality being thus performed towards a stranger in distress, my worthy benefactress (pointing to the mat, and telling me I might sleep there without apprehension) called to the female part of her family, who had stood gazing on me all the while in fixed astonishment, to resume their task of spinning cotton, in which they continued to employ themselves great part of the night. They lightened their labour with songs, one of which was composed extempore, for I was myself the subject of it: it was sung by one of the young women, the rest joining in a chorus. The air was sweet and plaintive, and the words, literally translated, were these: 'The winds roared, and the rains fell. The poor white man, faint and weary, came and sat under our tree; he has no mother to bring him milk, no wife to grind his corn.' Chorus—'Let us pity the white man; no mother has he!' &c. &c. Trifling as this recital may appear to the reader, to a person in my situation the circumstance was affecting in the highest degree. I was so oppressed by such unexpected kindness, that sleep fled before my eyes. In the morning, I presented my compassionate landlady with two of the four brass buttons that remained on my waistcoat, the only recompense I could make her."

Mansong, the king, having ordered Park to leave the neighbourhood (sending him, however, a guide, and a present of 5000 cowries, or small shells, as some recompense for his involuntary inhospitality), our traveller proceeded down the Niger, along the northern bank. On one occasion, while passing through the woods, he narrowly escaped being devoured by a large red lion, which he suddenly came upon, crouching in a bush, but which did not attack him. He proceeded first to Sansanding, thence to Moodiboo, Moorzan, and finally to Silla.

Here, worn out by fatigue and suffering of mind and body, destitute of all means either of subsistence or of prosecuting his journey—for even his horse had dropped down by the way—his resolution and energy, of which no man ever possessed a greater share, began to fail him. The rainy season had set in, and he could only travel in a canoe, which he had no money to hire; and he was advancing farther and farther into the territories of the fanatical Moors, who looked upon him with loathing and detestation, and whose compassion he had no gifts to propitiate. It was with great anguish of mind that he was at last brought to the conviction of the necessity of returning; but no one who has read his own simple and manly statement of his actual situation, and of the prospect before him, together with his poignant sensations at his disappointment, can for a moment blame him for turning back. Preparatory to doing so, he collected all the information in his power respecting the future course of the Niger, and the various kingdoms through which it flowed; but subsequent discoveries have since proved how little credit could be attached to the accounts of the natives, either from their positive ignorance, or their suspicious jealousy of strangers. Later and more fortunate travellers have solved the great problem, the honour of explaining which was denied to Park; and we now know that this great river, after flowing to a considerable distance eastward of Tombuctoo, makes a bend or elbow, and, after pursuing a south-westerly course, falls into the Atlantic Ocean, on the coast of Benin.

The narrative of Mr Park's return from the interior of Africa would be little else than a repetition of the various sufferings, adventures, and dangers he experienced on his way there, but only in a more aggravated form, in consequence both of his utterly destitute condition, and from the inundation of the level country, which compelled him to seek his way over chasms and precipices, without a guide, or any other means of shaping his course. He frequently waded for miles breast-deep in water. Once he was beset by banditti, who stript him of every thing but two shirts, his hat, and a pair of trousers; and on arriving at Sibidooloo, he was attacked by fever, which stretched him on his back for many weeks. Here, however, he was fortunate enough to meet with a slave-merchant, named Karfa Taura, who treated him with great kindness and humanity—took him into his own house—nursed him until he was well—kept him as his guest for seven months, without asking the smallest recompense—and finally conducted him in safety to Pisanía, with a cargo of his living merchandise. Our traveller immediately took his passage in an

American vessel, bound for the West Indies, whence he had no difficulty in getting to Britain, and landed at Falmouth on the 22d of December 1797, after an absence of two years and seven months. He instantly hastened to London, and the manner of his first interview with his kind kinsman Mr Dickson, who had long mourned for him as one lost, was perhaps as curious as any meeting of a similar nature that ever occurred. Mr Park arrived before daybreak on Christmas morning, and thinking it rather an unseasonable hour to call up his relative, he strolled for some time about the streets, until, finding one of the entrances to the gardens of the British Museum accidentally open, he stepped in. Here the very first person he encountered was Mr Dickson himself, under whose management the gardens then were, and who happened, by mere chance, to have gone there that morning. The astonishment of both, but more particularly of the latter, at this rencontre, may be well imagined.

Mr Park was received with distinguished honour by the African Association, and almost all the other scientific bodies and eminent literary characters of the metropolis, and was for some time, what is familiarly termed, the *lion* of the town. Having made arrangements in London for the publication of his travels, he proceeded to Scotland in June (1798), and spent the succeeding summer and autumn at his native place, Fowlshiels, amongst his relations and friends, his mother being the only parent then alive. His time, however, was far from being passed in idleness, or merely in social meetings with old friends and acquaintances, much as his company, as may readily be imagined, was sought after. He applied himself indefatigably to the compilation and composition of his travels, which he finished and carried back with him to London in the end of the year. In the following spring they were published, and it is needless to say how universally, or with what avidity, not to mention *incredibility* by many, they were read. For the latter contingency, Mr Park himself was prepared, and with a judicious caution, which few of his rivals in discovery, either before or since, have had the prudence or self-denial, as it may aptly be termed, to adopt, omitted the relation of many real incidents and adventures, which he feared might shake the probability of his narrative in the public estimation. This fact has been proved beyond doubt by the testimony of many of his intimate friends and relatives, to whom, although by no means of a communicative disposition, he freely mentioned many singular anecdotes and particulars, which he scrupled to submit to the jealous eye of the public.

After the publication of his travels, he returned to Scotland,

and in August the same year married Miss Anderson, the eldest daughter of his old master at Selkirk. For some time after his marriage, and before he set out on his second expedition, Mr Park appears to have been quite undecided as to his future prospects in life; and perhaps the comparative independence of his circumstances, from the profits of his publication, and the remuneration he obtained from the African Association, rendered him somewhat indifferent to any immediate permanent settlement. As time, however, continued to elapse, without any such proposition from the expected quarter being made, Mr Park perceived the imprudence of any longer remaining in idleness, and, in 1801, removed to Peebles, where he commenced practice as a surgeon. But it would appear he was not very successful in this speculation; and this fact, together with the natural restlessness of his disposition, seems to have rendered his situation peculiarly irksome to him. In answer to a friend, who suspected his design of again proceeding abroad, and earnestly remonstrated with him against it, he writes, "That a few inglorious winters of practice at Peebles was a risk as great, and would tend as effectually to shorten life, as the journey he was about to undertake."

In the meantime, his *ennui*, or impatience, was much relieved by the enjoyment of the best society in the neighbourhood, and by being honoured with the friendship of many of the most distinguished literary characters in Scotland at that time. Amongst these were the venerable Dr Adam Ferguson, then resident at Hallyards, near Peebles; Colonel Murray of Cringletie, father of the present Lord Cringletie; and the late Professor Dugald Stewart. A strong intimacy also sprang up between our traveller and the celebrated Author of Waverley, then but little known in the literary world, and who resided with his family at Ashiesteil, on the banks of the Tweed. This friendship commenced in the year 1804, after Mr Park had removed from Peebles to Fowlshiels, and was, as suspected, actually preparing for his second expedition to Africa, of which he had then privately got intimation. It is pleasing to know the cordiality and affectionate familiarity which subsisted between these celebrated men, and also that it arose from a marked congeniality in their tastes and habits. Park was an enthusiastic lover of poetry, especially the minstrelsy with which his native district was rife; and although he made no pretensions to the laurel crown himself, he occasionally gave expression to his feelings and thoughts in verse, even from his earliest years. It was little wonder, then, that he should own a particular predilection for the society of one whose heart and memory was so richly stored with the an-

cient ballad lore of his country, although his reserve towards strangers in general, which was carried even to a repulsive degree, was notorious. In particular, Sir Walter has noticed the strong aversion of his friend to being questioned in a promiscuous company on the subject of his adventures, of which grievance, as may be imagined, he had frequent cause to complain. Their last parting has been described by the former in strong and affecting terms. Mr Park paid him a farewell visit at Ashiesteil, where he remained during the night; and, next morning, Sir Walter *conveyed* him (according to the vernacular phrase) part of the way back to Fowlshiels, over the wild chain of pastoral hills that divide the Tweed from the Yarrow. Park talked much of his intended expedition, and stated his determination of going straight to Edinburgh, to avoid the pain of a formal parting from his wife and family. The two friends were then on the top of William-hope ridge, and the autumnal mist, which floated slowly and heavily down the valley, presented to the poet's imagination a striking emblem of the troubled and uncertain prospect of his friend's undertaking. As it was contemplated that Park should be accompanied, in his expedition through the interior of Africa, by a small military force, Scott strongly remonstrated against this plan, as impolitic and dangerous—inefficient to protect him from attack, yet large enough to excite ill-will and suspicion. Mr Park combated these objections, by describing the divided and disorganised condition of the numerous petty kingdoms of Africa, which rendered a combined movement against him unlikely; as also the custom of travellers and caravans of all nations being allowed to travel through their territories on paying a small duty. This interesting conversation occupied the friends till they came to a point of the moor where they had previously agreed to separate, and where a small ditch divided the moor from the road. In going over this ditch, Mr Park's horse stumbled, and nearly fell. "I am afraid, Mungo," said Scott, "that is a bad omen;" to which Park replied, smiling, "*Freits* (omens) follow them that freits follow;" and with this proverbial expression, implying that a superstitious anticipation is apt to bring on its own catastrophe, he put spurs to his horse, as if afraid of a formal leave-taking, and was speedily out of sight.

The new mission to Africa, which was now sanctioned and promoted by government, had been projected so far back as 1801; but owing to changes in the ministry, and other causes of delay, the preparations for it were not completed till 1805. Mr Park parted from his family in the way he had fixed on, and proceeded to London with his brother-in-law Mr James

Anderson, who, as well as Mr Scott, an artist, had resolved to accompany him in his expedition. On this occasion, Mr Park received the brevet commission of captain in Africa, and a similar commission of lieutenant to Mr Anderson. Mr Scott also was employed by government to accompany the expedition as draughtsman. Mr Park was, at the same time, empowered to enlist soldiers from the garrison of the island of Goree, to the number of forty-five, to accompany him in his journey; and the sum of L. 5000 was placed at his disposal, together with directions as to his route, &c. The expedition sailed from Portsmouth on the 30th January 1806, and arrived at Pisanía on the 28th of April, where preparations were immediately made for the inland journey. The party consisted of forty men, two lieutenants, a draughtsman (Mr Scott), and Park himself; they had horses for themselves, and asses for carrying the provisions and merchandise. Mr Park wrote to several friends at home, previous to setting out, in the highest spirits, and seemingly perfectly confident of success. In his letter to Mr Dickson, he says, "This day six weeks, I expect to drink all your healths in the Niger;" and again, "I have little doubt but that I shall be able, with presents and fair words, to pass through the country to the Niger; and if once we are fairly afloat, *the day is won.*" Alas! how sadly these sanguine expressions contrast with the melancholy issue of the expedition. Park's chance of reaching the Niger in safety depended mainly upon his doing so previous to the commencement of the rainy season, which is always most fatal to Europeans; but scarcely had they got half way when the rain set in, and the effect on the health of the men was as speedy as disastrous. They were seized with vomiting, sickness, dysentery, and delirium; some died on the road, others were drowned in the rivers, and several were left in the precarious charge of the natives in the villages. Some, still more unfortunate, were lost in the woods, where they would inevitably be devoured by wild beasts; while the native banditti, who imagined the caravan to contain immense wealth, hung upon their march, and plundered them at every opportunity. In crossing the Wondú, they nearly lost their guide Isaaco, by a large crocodile, which pulled him below the water several times, but from which he at last got free, much lacerated. At another time they were encountered by three large lions, but which took to flight at the sound of Mr Park's musket. At last the miserable remnant of the party—only nine out of forty-four, and these nine all sick, and some in a state of mental derangement—reached Bambakoo, on the Niger. Here Mr Scott was left behind on account of sickness, where he shortly died; while the rest proceeded to Sego, the capital

of Bambarra, which they reached on the 19th of September. Mansong was still king, and was so highly gratified with the presents brought to him, that he gave them permission to build a boat, and promised to protect them as far as lay in his power. Mr Park forthwith opened a shop for the sale of his European goods, which immediately obtained such demand, that his shop was crowded with customers from morning till night, and one day he turned over no less than 25,756 cowries. Here, however, he lost his brother-in-law Mr Anderson, a circumstance which afflicted him greatly, and made him feel, as he himself expressed it, "as if left a second time lonely and friendless amidst the wilds of Africa." But not all the sufferings he had undergone, the loss of his companions, or the dismal condition of the remainder, and the perilousness of his situation—nothing could damp the native ardour of his mind. Having got a sort of schooner constructed and rigged out, he prepared for setting out on his formidable journey, previous to which, however, he took care to bring his journal up to the latest hour, and wrote several letters to his friends and relatives in Britain. These were entrusted to his faithful guide Isaaco, to carry back to the Gambia, whence they were transmitted to England. His letter to Mrs Park, excepting that part of it which mentions the death of her brother and Mr Scott, was written in a cheering and hopeful strain; speaks with confidence of his reaching the ocean in safety, and of the probability of his being in England before the letter itself! His companions were now reduced to four, namely, Lieutenant Martyn and three soldiers, one of whom was deranged in his mind; and with this miserable remnant, and a guide named Amadi Fatouma, he set sail, as near as could be ascertained, on the 19th of November 1806. The progress of the unfortunate travellers after this period, is in a great measure shrouded in doubt and uncertainty.

Vague rumours of the death of Park and his companions were brought by some of the natives to the British settlements on the coast, even so early as the end of 1806; but no information could be got for several years of a nature to be at all relied on, during which time the suspense of his friends and of the public at large, but more particularly of his afflicted family, was of the most painful nature. At length, in 1810, Colonel Maxwell, governor of Senegal, dispatched Isaaco, Park's former guide, into the interior, in order to ascertain the truth or falsehood of the reports which prevailed. After an absence of a year and eight months, this individual returned, and the main facts of the narrative which he gave as the result of his labours, are not only but too probable in themselves,

but seem to have been thoroughly confirmed by the investigations of subsequent travellers. Isaaco stated that he had fallen in with Mr Park's guide, Amadi Fatouma, at Medina, near Sansanding, who, on seeing Isaaco, and hearing the name of Park, began to weep, saying, "they are all dead;" and was with great difficulty induced to detail the melancholy circumstances of the catastrophe. The account which he gave is too long to be introduced entire here, but the substance of it was as follows :—After leaving Sansanding, Mr Park navigated his way down the Niger, as far as Boussa, in the kingdom of Yaour, which was more than two-thirds of the distance towards the ocean, or Gulf of Guinea, and where the river is termed by the natives Quorra. They had frequent skirmishes with the natives, particularly in passing Tombuctoo, where several of them were killed. On reaching Yaour, Mr Park sent Amadi Fatouma ashore with various presents, some of which were to the chief or governor of the place, but the most valuable portion for the king, to whom the chief was requested to send them. A short while after, the latter sent to inquire if Mr Park intended to come back; and on being answered that he could return no more, the treacherous chief appropriated the presents intended for the king to his own use. This piece of knavery proved fatal to the unfortunate travellers. The king, indignant at the supposed slight cast on him, assembled a large army at the above-mentioned village of Boussa, where a large high rock stretches across the whole breadth of the river, the only passage for the river being through an opening in the rock in the form of a door. The army posted themselves on the top of the rock, and, on Mr Park's attempting to pass, assailed him with lances, pikes, arrows, stones, and missiles of every description. The beleaguered travellers defended themselves for a long time, until they were all either killed or severely wounded; when, seeing the uselessness of further resistance, Mr Park, Lieutenant Martyn, and one or two more, jumped out of the boat, and were drowned in attempting to get ashore. Only one slave was left alive. Such was the narrative of Amadi Fatouma, who had left Mr Park at Yaour, where his engagement with him terminated, and where he was for many months afterwards confined in irons, on suspicion of having purloined the presents intended for the king, which had been made away with by the treacherous chief. Amadi had obtained the accounts of the fatal scene from those who had taken a part in it. The natives afterwards endeavoured to account for the disappearance of Park, to the inquiries of subsequent travellers, by saying that his vessel had foundered against the rock, and that he and his

The frontiers being in some measure secured from invasion, he again, in 1758, resigned his commission, amidst the applauses and regrets of his soldiers.

Here might have terminated the military career of George Washington, and he might have passed the remainder of his days in the quietude of rural affairs, but for the unfortunate quarrel which took place betwixt Great Britain and her American possessions. It may here be necessary to explain to our readers the origin and nature of this distressing dispute. For a considerable period Great Britain had possessed a large tract of territory in the North American continent, divided into colonies or separate jurisdictions, the inhabitants of which being chiefly emigrants from this country, were governed by English laws, and guaranteed that civil and religious liberty common to ordinary British subjects. Each of these colonies had a local parliament or assembly of delegates of its own, presided over by a governor appointed by the British ministry. One of the understood regulations in managing these distant countries, was, that they should contribute no taxes to Britain; but it having happened in the course of time, that the British treasury stood much in need of a supply of money, our Ministry and Parliament resolved on exacting certain taxes or duties from the American colonists. These taxes, we are informed, would have been freely contributed by the Americans, provided they had been granted the power of sending representatives to Britain to sit in Parliament; but this proposal being strenuously refused, through a fear of its leading to further changes in the British legislature, the result was, that the Americans refused to pay any taxes whatever, and in a short time opposed their exaction by force. All men are now of opinion that the British government at this period acted with extreme impropriety; nevertheless, the nation at the time rushed heedlessly into a war with the colonies, expecting speedily to quell all opposition to the laws. As for the Americans, they sagaciously prepared for the struggle.

In constructing an army for the defence of the provinces, the Americans bestowed the command of the forces on George Washington, of whose military talents and prudence they had already seen many proofs. No man in any age or country ever filled a more arduous station than that in which he was now placed. He was called to defend an extensive country just beginning the perilous experiment of self-government, altogether unpractised in war on a great scale, and with no other resources than her spirit, against a nation possessed of all the means, and strong with all the sinews of war, and able, by its command of the ocean, to carry its hostilities against any

part of that extensive coast, which had drawn towards it the best part of the wealth and industry of the country. For a considerable period, his troops had no fire-arms but what they provided themselves ; they had no tents, no magazines, no cavalry, no artillery, and scarcely any ammunition. So provided or rather unprovided, the best troops in the world would not have been able to do much ; but when we consider the nature and description of the American armies, we must wonder that he was able to keep the field for a single campaign against the well-trained forces of Britain.

The history of the war in America may be summed up in a few words. Instead of transporting large masses of men capable of crushing in an instant the united force of the colonists, the British ministry dispatched small detachments of troops, who were invariably cut up in detail as they marched through the country, and on some occasions whole regiments had ignominiously to lay down their arms. In this species of inglorious war, which has afforded our American brethren some cause for boasting, Washington was equally conspicuous for his cool determination and courage in the heat of conflict, and his mercy after victory, so as to win the applause of both friend and foe. The situation of the general was, moreover, one of peculiar difficulty. He experienced languor, insubordination, and desertion in his followers : and it was only after he had the address to induce his countrymen to establish a standing army, on something like regular principles, that success crowned his exertions. It is allowed by all parties that the services of Washington in this grand struggle against oppression, were as great as ever were performed by any man to any nation. History is full of far more brilliant exploits : but it must always be recollected that in Washington's situation, not to be defeated was victory. In the arrangements on the day of battle, we should discover but a small portion of those happy endowments which gave him an unrivalled ascendancy over the minds of his countrymen ; which enabled him to keep a powerful enemy in awe with fluctuating levies, whose defective constitution forbade the necessary severities of discipline ; which enabled him to awaken sentiments of honour and patriotism in hearts divided by animosities and jealousies. In criticising his military conduct, we must always keep in view his means ; and if we cannot discover any single achievement of peculiar brilliancy, we shall yet be forced to admire a long series of arduous operations, which display penetration and energy, combined with uniform and unerring sagacity. Although it was simply the redress of grievances relative to taxation which prompted them to take up arms against the

mother country, as they began to feel their strength, they aspired to higher views.

The war was commenced on the 14th of June 1774, and with greater or lesser vigour, was carried on for about eight years. Two years after its breaking out, on the 4th of July 1776, the colonists declared their independence of the English crown, which was acknowledged by France in 1778, by Holland in 1782, but not by the British Parliament till the 30th of November 1783. Yet, in thus securing the blessing of national liberty, the colonists, it seems, were by no means satisfied. They broke out into parties; disaffection spread on all sides; and had not the wisdom and patriotism of Washington suggested expedients to allay the ferment and avert the danger, the Union of States would have been dissolved, and national ruin and disgrace the consequence.

Having given liberty to his country, Washington once more retired from public life to his paternal roof, followed by the fervent admiration of his countrymen. Unlike Cromwell, or Napoleon in later times, he had no desire to take advantage of his situation or popularity, and so secure the office, for life, of emperor, king, or protector. He freely renounced all official distinction, thereby offering an example of moral virtue quite unparalleled in the history of modern times, and retaining no other reward for his extraordinary services than his country's love. The following letter to La Fayette—a distinguished French nobleman, who assisted in establishing the independence of the states—written soon after his arrival at Mount Vernon, gives a lively picture of his feelings, and breathes a fine spirit of philosophy.

“At length, my dear marquis, I have become a private citizen on the banks of the Potomac, and under the shadow of my own vine and my own fig-tree. Free from the bustle of a camp, and the busy scenes of public life, I am solacing myself with those tranquil enjoyments, of which the soldier, who is ever in pursuit of fame—the statesman, whose watchful days and sleepless nights are spent in devising schemes to promote the welfare of his own, or the ruin of other countries, as if this globe was insufficient for us all—and the courtier, who is always watching the countenance of his prince, in the hope of catching a gracious smile, can have very little conception. I have not only retired from all public employments, but am retiring within myself, and shall be able to view the solitary walk, and tread the paths of private life, with heartfelt satisfaction. Envious of none, I am determined to be pleased with all, and move gently down the stream of life, until I sleep with my fathers.”

During his retirement, objects of public utility still occupied his thoughts; and it was not long before he formed, with his characteristic sagacity, a plan of improving the internal navigation of the country. This plan was, to open as high as possible the great eastern rivers, and to connect them, by means of intermediate streams, with the Ohio: and his object in this magnificent undertaking was to draw the states beyond the Alleghany mountains into a closer connexion with those upon the Atlantic; and thus, by multiplying their commercial relations, to give stability and unity to those of a political nature. These beneficent schemes of Washington have been fully accomplished. He was soon, however, called upon by a sense of duty into more burdensome labours. The jealousies prevailing among the states threatened again to wreck the newly formed republican government. When at last it became evident so all that some alteration of the general system was indispensable to the preservation of its parts, a convention was held under his auspices; and the constitution which it formed having been adopted by the greater part of the states, he was, in April 1789, called to the office of first President, by the unanimous voice of the confederation. There is abundance of evidence that he accepted this office of chief magistrate of the United States with the greatest reluctance. He had no ambition of high place; and, free from all presumption, this truly great man felt diffident of his capacity to administer, in peace, the affairs of a country which, in war, he had saved from ruin. "I bade adieu to Mount Vernon, to private life, and domestic felicity," says he, in an entry in his diary; "and, with a mind oppressed with more anxious and painful sensations than I have words to express, set out for New York, with the best disposition to render service to my country, but with less hope of answering its expectations."

The duties of Washington's civil administration, though far less arduous than those of his military command, yet required much of that fortitude and sagacity which that command so conspicuously displayed. To re-establish credit, and provide for the debts of the Union, when there was every desire to profit by injustice, and where taxation was both difficult and odious—to give stability and energy to a new government, encountered in its first operations by the contending interests of thirteen separate states—and to preserve the blessings of peace to a rising community, when the misguided feelings of the people would have precipitated a war, were efforts which statesmen are seldom called to make, and which but few would have been equal to perform. In his public conduct, we look in vain for any of those vices which oppose the prosperity of

nations, and the peace of the world. In choosing the officers of his government, in virtue of the powers committed to him by the constitution, he is universally allowed to have displayed the utmost disinterestedness. No prejudices, no affections, no interests, were seen to interfere with his great duty, to call to the management of a nation's concerns the talents from which a nation has most to hope. His addresses to the people and to Congress—as the parliament of the American states is called—afford indubitable proofs of the purity, as well as the solidity of his principles; and it is impossible to read them, and to trace them, as exemplified in the whole course of his public career, without admitting “that he performed justly, skilfully, and magnanimously, all the offices, both public and private, of peace and war.” General Washington survived his retirement from the presidency, which he twice enjoyed, only two years. He died on the 14th of December 1799, of an inflammation in the throat, occasioned by a slight rain to which he had been exposed the preceding day. Soon after the disease commenced, he foresaw he would die; and he met his fate with his accustomed fortitude.

The personal appearance of this lamented statesman was noble and commanding; and it has been frequently remarked, that the impression of awe which it was calculated to produce, was never effaced by frequency of intercourse. He was reserved in his manners, and unaffectedly modest. He was hospitable, and his establishment expensive, but under exact regulation. He spoke with diffidence; but his letters to Congress, and his written addresses, are admirable for clearness and solidity. His personal habits were exceedingly temperate, and the purity of his morals was never questioned. In short, to use the words of Mr Fox, “a character, of virtues so happily tempered by one another, and so wholly unalloyed with any vices, is hardly to be found in the pages of history.” By all classes of citizens in the United States, the memory of George Washington is cherished above that of all other patriots, while his name serves as a lasting incitement to the nation to preserve its institutions unimpaired to a distant posterity.

JAMES WATT.

ALL the inventions and improvements of modern times, if measured by their effects upon the condition of society, sink into insignificance when compared with the extraordinary results which have followed the employment of steam as a mechanical agent. To one individual, the illustrious Watt, the merit and honour of having first rendered it extensively available for that purpose, are pre-eminently due. The force of steam, now so important an agent in mechanics, was nearly altogether overlooked until within the last two centuries. The ancients were in a small measure acquainted with its expansive powers; its prodigious energies were noticed by Solomon de Caus, a French writer who flourished in the beginning of the seventeenth century; in the decade of 1660, the Marquis of Worcester similarly remarked the properties of steam; about twenty years later, Sir Samuel Morland projected a method of employing it as a mechanical power; and Denis Papier, a native of France, about the year 1690, contrived an engine acting with steam and the pressure of the atmosphere, for lifting water, but on an exceedingly rude principle. The next who tried such a scheme was Captain Savery, who about the year 1698 began to erect engines for lifting water, somewhat on the principle of the sucking-pump. Not long after Savery had invented his engine, Thomas Newcomen, an ironmonger, and John Calley, a glazier, both of Dartmouth in Devonshire, began also to direct their attention to the employment of steam as a mechanical power. Their first engine was constructed about the year 1711. This machine still acted on the principle of condensing the steam by means of cold water, and the pressure of the atmosphere on the piston. It was found of great value in pumping water from deep mines; but the mode of its construction, the great waste of fuel, the continual cooling and heating of the cylinder, and the limited capacities of the atmosphere in impelling the piston downward, all tended to circumscribe its utility. The knowledge of what might be done by steam was in this state, when the subject at last happily attracted the attention of Mr Watt.

James Watt was born at Greenock, a sea-port town in the west of Scotland, on the 19th of January 1736. His father followed the profession of a block-maker and ship-chandler, and was for some time one of the magistrates of Greenock. He was instructed in the elementary branches of education in his native place; but his health being delicate, as it con-

tinued to be during life, his attendance at school was not very regular; a circumstance which led him to pursue his studies at home, in various branches of useful knowledge. He early addicted himself to pursuits in mechanical and mathematical science, and at the age of eighteen was sent to London, to be an apprentice to a maker of mathematical instruments. Little more than a year elapsed before he was compelled to abandon the metropolis, and return to Scotland, for the sake of his health.

After returning to his native country, he endeavoured to settle in Glasgow as a mathematical instrument maker; but in this laudable attempt to earn a subsistence he was violently opposed by some of the trades corporations; and it was only by being constituted mathematical instrument maker to the university, and by being installed in apartments within the buildings of the college, that in 1757 he was able to commence his business. It was to the friendship of Adam Smith, the political economist, Black the chemist, and Simson the geometer, that he was mainly indebted for this honourable preferment in his profession. Here he remained six years, and in 1763, when about to enter the married life, he removed from the university to a house in the town, where he commenced the profession of general engineer. He was now well employed in making surveys and estimates for canals, harbours, bridges, and other public works; but while thus engaged in the details of his profession, his mind was contemplating the possibility of improving the hitherto rudely constructed steam-engine. His attention had been drawn to this important subject of investigation while yet residing in the college. In the winter of 1763-4, a small model of Newcomen's engine was sent to him by Anderson, the professor of natural philosophy, to be repaired, and fitted for exhibition in the class. In repairing this small model, he was struck with the radical imperfections of the process by which the pressure is given by the atmosphere, and the condensing of the steam in the cylinder; a process calculated to produce only a very slow and unsteady movement. He forthwith entered upon a course of experiments on the properties or powers of steam, the amount of heat to be procured by the combustion of certain quantities of coal, and many other particulars connected with the working of the steam-engine.

One very important fact in this manner became obvious to his apprehension. He discovered that hitherto a much more powerful application of heat than was necessary, had been employed in order to increase the constant cooling of the cylinder, by the injection of cold water to condense the steam; in short, that there was a waste of three-fourths of the fuel

employed. The two principal things to be effected were, first, to keep the cylinder always as hot as the steam to be admitted into it; and, second, to cool down the condensed steam and the injection water used for condensation, to a temperature not exceeding a hundred degrees. It was early in the summer of 1765 that the method of accomplishing these two objects was first matured in his mind. It then occurred to him, that if a communication were opened between a cylinder containing steam and another vessel exhausted of air and other fluids, the steam would immediately rush into the empty vessel, and continue so to do until an equilibrium was established, and by keeping that vessel very cool the steam would continue to enter and be condensed. A difficulty still remained to be overcome—How was the condensed steam and injection water, together with the air which must necessarily accompany it, to be withdrawn from the condensing vessel? Watt thought of two methods—one by a long pipe, sunk into the earth, and the other by employing a pump, wrought by the engine itself; the latter was adopted. Thus was laid open the leading principle of a machine the most powerful, the most regular, and the most ingenious, ever invented by man. Watt constructed a model, the cylinder of which was nine inches diameter, making several improvements besides those above alluded to. He surrounded the cylinder with a casing, the intervening space being filled with steam to keep the cylinder warm. He also put a cover on the top, causing the piston rod to move through a hole in it, and the piston was rendered air-tight by being lubricated with wax and tallow, instead of water as formerly.

As thus subsequently improved by Watt, the steam-engine worked no longer by atmospheric pressure on the piston, but by the alternate injection and withdrawal of steam—the injection by an opening in the lower part of the cylinder driving the piston upwards, and the injection by an opening in the upper part of the cylinder driving the piston down again, the waste steam in both instances being withdrawn into a side vessel, and a vacuum formed to allow the play of the piston. Besides these principal improvements on the old steam-engine, he contrived many of a minor nature; among others, a plan by which the boiler supplies itself with water from a cistern, and another by which the speed of the engine is regulated to any required rate. By these and other remedies, the steam-engine was rendered an agent of power applicable to every description of mechanism wherein wheels required to be turned. In carrying his ideas into execution, Watt encountered, as was to be expected, many difficulties, arising principally from the impossibility of realising theoretical perfection of structure

with such materials as human art is obliged to work with ; but his ingenuity and perseverance overcame every obstacle.

Besides the various mechanical difficulties which the ingenuity of Watt enabled him to surmount, he had to contend for some time with obstacles of a different nature. He had no pecuniary resources of his own, and was at first without any friend willing to run the risk of the outlay necessary for an experiment on a sufficiently large scale. At last he applied to Dr Roebuck, an ingenious and spirited speculator, who had just established the Carron iron-works, not far from Glasgow, and held also at this time a lease of the extensive coal-works at Kinneal, the property of the Duke of Hamilton. Dr Roebuck agreed to advance the requisite funds, on having two-thirds of the profits made over to him ; and upon this Mr Watt took out his first patent in the beginning of the year 1769. An engine, with a cylinder of eighteen inches diameter, was soon after erected at Kinneal ; and although, as a first experiment, it was necessarily in some respects of defective construction, its working completely demonstrated the great value of Watt's improvements. But Dr Roebuck, whose undertakings were very numerous and various, in no long time after forming this connection found himself involved in such pecuniary difficulties, as to put it out of his power to make any further advances in prosecution of its object. On this, Watt applied himself for some years almost entirely to the ordinary work of his profession as a civil engineer ; at last, about the year 1774, when all hopes of any further assistance from Dr Roebuck were at an end, he resolved to close with a proposal which had been made to him through his friend Dr Small of Birmingham, that he should remove to that town, and enter into partnership with the eminent hardware manufacturer, Mr Bolton, whose extensive establishments at Soho had already become famous over Europe, and procured for England an unrivalled reputation for the arts there carried on. Accordingly, an arrangement having been made with Dr Roebuck, by which his share of the patent was transferred to Mr Bolton, the firm of Bolton and Watt commenced the business of making steam-engines in the year 1775.

Mr Watt now obtained from Parliament an extension of his patent for twenty-five years from this date, in consideration of the acknowledged national importance of his inventions. The first thing which he and his partner did was to erect an engine at Soho, which they invited all persons interested in such machines to inspect. They then proposed to erect similar engines wherever required, on the very liberal principle of receiving as payment for each, only one-third of the saving

in fuel which it should effect, as compared with one of the old construction. The draining of mines was one of the many applications of the steam-power now at his command, which Watt contemplated, and in course of time accomplished. During the whole twenty-five years, indeed, over which his renewed patent extended, the perfecting of his invention was his chief occupation; and, notwithstanding a delicate state of health, and the depressing affliction of severe headaches, to which he was extremely subject, he continued throughout this period to persevere with unwearied diligence in adding new improvements to the mechanism of the engine, and devising the means of applying it to new purposes of usefulness. He devoted, in particular, the exertions of many years to the contriving of the best methods of making the action of the piston communicate a rotatory motion in various circumstances, and between the years 1781 and 1785 he took out four different patents for inventions having this object in view.

It is gratifying to know, that, unlike many sons of genius, Watt seemed to enjoy a just tribute of honour and reward for his inventions. He lived to see the steam-engine in almost universal use, a circumstance perhaps more pleasing than the praise lavished upon him by learned societies. In 1785, he was elected a Fellow of the Royal Society; the degree of Doctor of Laws was conferred upon him by the University of Glasgow in 1806; and, in 1808, he was elected a member of the French Institute. Enjoying the respect of all who knew him, and loaded with honours, he died on the 25th of August 1819, in the eighty-fourth year of his age.

The various wonders which may be accomplished by the steam-engine of Watt, have engaged the pens of different imaginative writers. One speaks of it in the following forcible and graphic language:—"In the present perfect state of the engine, it appears a thing almost endowed with intelligence. It regulates with perfect accuracy and uniformity the number of its strokes in a given time, counting or recording them, moreover, to tell how much work it has done, as a clock records the beats of its pendulum; it regulates the quantity of steam admitted to work, the briskness of the fire, the supply of water to the boiler, the supply of coals to the fire; it opens and shuts its valves with absolute precision as to time and manner; it oils its joints; it takes out any air which may accidentally enter into parts which should be vacuum; and when any thing goes wrong which it cannot of itself rectify, it warns its attendants by ringing a bell: yet, with all these talents and qualities, and even when exerting the power of six hundred horses, it is obedient to the hand of a child. Its aliment

is coal, wood, charcoal, or other combustible ; it consumes none while idle ; it never tires, and wants no sleep ; it is not subject to malady when originally well made, and only refuses to work when worn out with age ; it is equally active in all climates, and will do work of any kind ; it is a water-pumper, a miner, a sailor, a cotton-spinner, a weaver, a blacksmith, a miller, &c. &c ; and a small engine in the character of a steam pony may be seen dragging after it on a railroad a hundred tons of merchandise, or a regiment of soldiers, with greater speed than that of our fleetest coaches. It is the king of machines, and a permanent realisation of the genii of Eastern fable, whose supernatural powers were occasionally at the command of man."

To descend from this flight of fancy to sober description, we may state, that the steam-engine, as improved by Watt, has been applied as a moving power to at least four very important branches of commerce and the arts. These are, the cotton-spinning machinery and power-looms, steam-boats, locomotive vehicles on railways, and printing machinery. We now proceed to notice the lives of some of the individuals connected with these surprising improvements in our social system.

JAMES HARGRAVES, RICHARD ARKWRIGHT, AND OTHER IMPROVERS OF THE COTTON MANUFACTURE.

THE period at which the cotton manufacture was first introduced into Great Britain is conjectured to have been in the early part of the seventeenth century, and there is reason to believe that Manchester was the first seat of the art. As a source of commercial profit, however, this species of trade remained long very insignificant, the only mechanical power employed in the fabrication of the yarn being the common one-thread spinning wheel. Moreover, for the period of a century at least, the weft or transverse threads of the web, only, were cotton, it having been found difficult, if not reckoned impossible, owing to the want of proper machinery, to manufacture cotton warp, that is, the longitudinal threads of the web, of sufficient strength ; and in place of which, linen yarn, principally from Germany and Ireland, was substituted. The cotton manufacture was then wholly conducted on the system of cottage industry. Every weaver was a master manufacturer ; his cottage was his factory, and himself the sole artisan.

He provided himself with the weft and warp as he best could, wove them into a web, and disposed of it at market to the highest bidder.

About the year 1760, merchants began to employ weavers to work up the prepared material, and the business of exporting cottons both to the continent of Europe and to America, began to be carried on on a larger scale than formerly. As the demand for the manufactured article continued to increase, a greater and greater scarcity of weft was experienced, till, at last, although there were fifty thousand spindles constantly at work in Lancashire alone, each occupying an individual spinner, they were found quite inadequate to supply the quantity of thread required. It may here be mentioned, that already the art of weaving had been considerably improved. The old plan of throwing the shuttle containing the weft, from side to side of the web, by the hand, was superseded, in 1738, by a person of the name of John Kay, a native of Bury in Lancashire, who invented a new method of casting the shuttle, by an extremely simple and effectual mechanical contrivance, wherein one hand of the weaver did the work of both. In 1760, Robert Kay of Bury, a son of John's, invented the drop-box, a contrivance by means of which a weaver can at pleasure use any one of three shuttles without stopping, and can thereby produce a fabric of various colours, almost with the same facility that he can weave a common calico.

While the art of weaving was thus considerably improved, the process of carding the cotton wool was yet clumsy and expensive. At length, this also was remedied. The first improvement on carding was made, as almost all the improvements in the cotton manufacture have been, by a person in humble life—James Hargraves, a carpenter at Blackburn in Lancashire. This illiterate, but most ingenious and inventive person, adapted the stock-cards used in the woollen manufacture to the carding of cotton, and greatly improved them. In consequence, a workman was enabled to execute about double the work, and with greater ease, than by means of hand cards—the only instrument previously in use. Hargraves' inventions were soon succeeded by the cylindrical cards, or carding engine.

But the tedious and expensive method of spinning by the hand, was the grand obstacle in the way of the extension and improvement of the manufacture. Insurmountable, however, as this obstacle must at first sight have appeared, it was completely overcome by the unparalleled ingenuity, talent, and perseverance of a few self-taught individuals. Hargraves seems to have led the way in this career of discovery. In 1767, he had constructed a machine called a *spinning-jenny*, which

enabled a spinner to spin *eight* threads with the same facility that one had been previously spun; and the machine was subsequently brought to such perfection as to enable a little girl to work no fewer than from *eighty to one hundred and twenty* spindles! There are few individuals to whom the manufactures of this country are so largely indebted as Hargraves. It is true that his machine was of very inferior powers to those by which it was immediately followed. But it is not, perhaps, too much to say, that it was one great cause of their being introduced. No sooner had it been seen what a simple mechanical contrivance could effect, than the attention of the most ingenious individuals was immediately drawn to the subject; and the path was opened, by following which so many splendid inventions and discoveries have been made. However much Hargraves' inventions may have tended to enrich others, to himself they were productive only of bankruptcy and ruin. The moment the intelligence transpired that he had invented a machine by which the spinning of cotton was greatly facilitated, an ignorant and infuriated mob, composed chiefly of persons engaged in that employment, broke into his house, and destroyed his machine; and some time after, when experience had completely demonstrated the superiority of the jenny, the mob again resorted to violence, and not only broke into Hargraves' house, but into the houses of most of those who had adopted his machines, which were every where proscribed. In consequence of this persecution, Hargraves removed to Nottingham, where he took out a patent for his invention. But he was not, even there, allowed to continue in the peaceable enjoyment of his rights. His patent was invaded, and he found it necessary to apply to the courts for redress. A numerous association was in consequence formed to defeat his efforts; and being, owing to a want of success in an attempt to establish himself in business, unable to contend against the wealth and influence of the powerful combination arrayed against him, he was obliged to give up the unequal contest, and to submit to see himself robbed of the fruits of his ingenuity. He soon after fell into a state of extreme poverty, and, to the indelible disgrace of his age and country, was permitted to end his days in the workhouse at Nottingham, even after the merit of his invention had been universally acknowledged.

The spinning-jenny of the unfortunate Hargraves was applicable only to the spinning of cotton for weft, being unable to give to yarn that degree of firmness and hardness which is required in the longitudinal threads or warp. But this deficiency was soon after supplied by the invention of the spinning-

frame, by Richard Arkwright, a meritorious individual, whose biography is full of interest.

Richard Arkwright was born on the 23d of December 1732, at Preston, in Lancashire. His parents were very poor, and he was the youngest of a family of thirteen children; so that we may suppose the school education he received, if he ever was at school at all, was extremely limited. Indeed, but little learning would probably be deemed necessary for the profession to which he was bred—that of a barber. This business he continued to follow till he was nearly thirty years of age; and this first period of his history is of course obscure enough. About the year 1760, however, or soon after, he gave up shaving, and commenced business as an itinerant dealer in hair, collecting the commodity by travelling up and down the country, and then, after he had dressed it, selling it again to the wig-makers, with whom he very soon acquired the character of keeping a better article than any of his rivals in the same trade. He had obtained possession, too, we are told, of the secret method of dyeing hair, by which he doubtless contrived to augment his profits. It is unfortunate that very little is known of the steps by which he was led to those inventions that raised him to affluence, and have immortalised his name. Residing in a district where a considerable manufacture of linen goods, and of linen and cotton mixed, was carried on, he had ample opportunities of becoming acquainted with the various processes that were then in use; and being endowed with a most original and inventive genius, and having sagacity to perceive what was likely to prove the most advantageous pursuit in which he could embark, his attention was naturally drawn to the improvement of the method of spinning practised in his neighbourhood. He stated that he accidentally derived the first hint of his great invention from seeing a red-hot iron bar elongated, by being made to pass between rollers; and though there is no mechanical analogy between that operation and his process of spinning, it is not difficult to imagine, that, by reflecting upon it, and placing the subject in different points of view, it might lead him to his invention. The precise era of the discovery is not known; but it is most probable that the felicitous idea of spinning by rollers had occurred to his mind as early as the period when Hargraves was engaged in the invention of the jenny, or almost immediately after. Not being himself a practical mechanic, Arkwright employed a person of the name of John Kay, a watchmaker at Warrington, to assist him in the preparation of the parts of his machine. Having made some progress towards the completion of his inventions, he applied, in 1767, to Mr

Atherton, of Liverpool, for pecuniary assistance, to enable him to carry them into effect ; but this gentleman declined embarking his property in what appeared so hazardous a speculation, though he is said to have sent him some workmen to assist in the construction of his machine ; the first model of which was set up in the parlour of the house belonging to the Free Grammar School at Preston. His inventions being at length brought into a pretty advanced state, Arkwright, accompanied by Kay, and a Mr Smalley, of Preston, removed to Nottingham, in 1768, in order to avoid the attacks of the same lawless rabble that had driven Hargraves out of Lancashire. Here his operations were at first greatly fettered by a want of capital. But Mr Strutt, of Derby, a gentleman of great mechanical skill, and largely engaged in the stocking manufacture, having seen Arkwright's inventions, and satisfied himself of their extraordinary value, immediately entered, conjointly with his partner Mr Need, into partnership with him.

Before going farther, let us say a word regarding the Mr Strutt here alluded to. Jedediah Strutt was the son of a farmer, and was born in 1726. His father paid little attention to his education ; but, under every disadvantage, he acquired an extensive knowledge of science and literature. He was the first individual who succeeded in adapting the stocking-frame to the manufacture of *ribbed* stockings. The manufacture of these stockings, which he established at Derby, was conducted on a very large scale—first, by himself and his partner Mr Need, and subsequently by his sons, until about 1805, when they withdrew from this branch of business.

The command of the necessary funds being obtained by means of a connection with Strutt and Need, Arkwright erected his first mill, which was driven by horses, at Nottingham, and took out a patent for spinning by rollers, in 1769. But as the mode of working the machinery by horse-power was found too expensive, Sir Richard built a second factory, on a much larger scale, at Cromford, in Derbyshire, in 1771 ; the machinery of which was turned by a water-wheel. Having made several additional discoveries and improvements in the processes of carding, roving, and spinning, he took out a fresh patent for the whole in 1775 ; and thus completed a series of machinery so various and complicated, yet so admirably combined, and well adapted to produce the intended effect, in its most perfect form, as to excite the astonishment and admiration of every one capable of appreciating the ingenuity displayed, and the difficulties overcome.

The machinery for which Arkwright took out his patents consisted of various parts, his second specification enumerating

no fewer than ten different contrivances ; but of these, the one that was of by far the greatest importance, was a device for drawing out the cotton from a coarse to a finer and harder twisted thread, and so rendering it fit to be used for warp as well as weft. This was most ingeniously managed by the application of a principle which had not yet been introduced in any other mechanical operation. The cotton was in the first place drawn off from the skewers on which it was fixed, by one pair of rollers, which were made to move at a comparatively slow rate, and which formed it into threads of the first and coarser quality ; but at a little distance from the first was placed a second pair of rollers, revolving three, four, or five times as fast, which took it up when it had passed through the others, the effect of which would be to reduce the thread to a degree of fineness so many times greater than that which it originally had. The first pair of rollers might be regarded as the feeders of the second, which could receive no more than the others sent to them ; and that, again, could be no more than these others themselves took up from the skewers. As the second pair of rollers, therefore, revolved, we will say, five times for every one revolution of the first pair, or, which is the same thing, required for their consumption in a given time five times the length of thread that the first did, they could obviously only obtain so much length by drawing out the common portion of cotton into thread of five times the original fineness. Nothing could be more beautiful or more effective than this contrivance, which, with an additional provision for giving the proper twist to the thread, constitutes what is called the water-frame or throstle.

Of this part of his machinery, Arkwright particularly claimed the invention as his own. He admitted, with regard to some of the other machines included in his patent, that he was rather their improver than their inventor ; and the original spinning-machine for coarse thread, commonly called the spinning-jenny, he frankly attributed in its first conception to Hargraves. There were, however, other parties who had an interest as well as Arkwright in these new machines, and who would not allow that any of them were of his invention. As to the principal of them, the water-frame, they alleged that it was in reality the invention of a poor reed-maker of the name of Highs, or Hayes, and that Arkwright had obtained the knowledge of it from his old associate Kay, who had been employed by Highs to assist him in constructing a model of it a short time before Arkwright had sought his acquaintance. Many cotton-spinners, professing to believe this to be the true state of the case, actually used Arkwright's machinery in their factories, not

withstanding the patent by which he had attempted to protect it ; and this invasion of his monopoly was carried to such an extent, that at last he found himself obliged to bring actions against no fewer than nine different parties.

It would be needless to enter here into the history of Arkwright's legal contests, which, after various success, he finally lost, and that only because the specifications of his patents were obscure, or mysteriously expressed. The world at large, however, readily acknowledged the originality of his invention, the public doing him that justice which the law denied. Whether he was the actual discoverer of the process, is, we think, of little moment. He made the invention known under all kinds of embarrassments, and at the risk of great loss ; and thus, though he were proved to be merely the publisher of the invention, he would, as such, deserve more praise than the pusillanimous beings, who laid no claim to the discovery till it was established as successful.

The most marked traits in the character of Arkwright were his wonderful ardour, energy, and perseverance. He commonly laboured in his multifarious concerns from five o'clock in the morning till nine at night ; and when considerably more than fifty years of age—feeling that the defects of his education placed him under great difficulty and inconvenience in conducting his correspondence, and in the general management of his business—he encroached upon his sleep, in order to gain an hour each day to learn English grammar, and another hour to improve his writing and orthography ! He was impatient of whatever interfered with his favourite pursuits ; and the fact is too strikingly characteristic not to be mentioned, that he separated from his wife not many years after their marriage, because she, being convinced that he would starve his family by scheming when he should have been shaving, broke some of his experimental models of machinery. Arkwright was a severe economist of time ; and, that he might not waste a moment, he generally travelled with four horses, and at a very rapid speed. He had extensive concerns in Derbyshire, Lancashire, and Scotland ; and his speculative schemes, which were vast and daring, generally proved advantageous. The exertions which he put forth in establishing his machinery were the more remarkable, from being made while in bad health. During the whole of his career, he was labouring under a very severe asthmatic affection. A complication of disorders at length terminated his truly useful life, in 1792, at his works at Cromford, in the sixtieth year of his age. He was high sheriff of Derbyshire in 1786 ; and having presented a congratulatory address to his Majesty on his escape from the at-

tempt on his life by Margaret Nicholson, received the honour of knighthood.

The next great improvement in machinery which we have to mention in connection with the cotton manufacture, was the invention of the *mule-jenny*, so called from its being a combination of the jenny and the spinning-frame. The inventor was Mr Samuel Crompton, of Bolton-le-moor, who made it in 1775, but did not bring it into use for several years afterwards. The mule-jenny was found to be able to spin yarn to a much finer degree than the frame of Hargraves, which it consequently superseded; and all sorts of wets, from the coarsest to the finest, are now spun by it. Mr Crompton received L.5000 from Parliament for his invention. The working of the mule by the hand was superseded, in 1792, by the application of machinery, by Mr W. Kelly of Glasgow. The last grand discovery in this branch of manufactures was that of the *power-loom*, invented and brought into use in 1787, by the Rev. Mr Cartwright (brother of Major Cartwright, the well-known advocate of Parliamentary reform), a clergyman in Kent. The power-loom is made of iron, and moved by an engine, which communicates its influence to all the looms in a factory. A boy or girl can with ease attend to two power-loom, and can by their means produce six times as much well-woven cloth as could be produced by the best hand-weaver. During late years, the number of power-loom has increased to an enormous amount. By means of these wonderful machines, all kinds of cotton cloths have been lowered to a price so comparatively trifling, that they are now placed within the reach of the very poorest in the community, while the national resources have been increased to an extent equally conspicuous and gratifying.*

While Arkwright and others were engaged in improving the manufacture of cotton in Great Britain, another genius was at work in America, having the great object in view of preparing the cotton from its raw state for the processes to be employed in its subsequent manufacture. Of this genius we have now to speak. Eli Whitney, one of the most intrepid and persevering improvers that ever lived, was the son of a respectable farmer at Westborough, Worcester county, Massachusetts, where he was born in the year 1765. Very early, young Eli gave striking indications of the mechanical genius for which he afterwards was so distinguished. His education

* For a succinct account of the various steps in the progress of this important branch of industry, we beg to refer the inquirer to "The History of the Cotton Manufacture in Great Britain, by Edward Baines, Jun.," the best work on the subject; also to the Edinburgh Review, No. 91.

was of a limited character until he had reached the age of nineteen, when he conceived the idea of entering a college. Accordingly, notwithstanding the opposition of his parents, he prepared himself, partly by means of the profits of his manual labour, partly by teaching a village school, for the University of New Haven, which he entered May 1789. Soon after he took his degree, in the autumn of 1792, he entered into an engagement with a gentleman of Georgia, to reside in his family as a private teacher; but on his arrival in that state, he found that another teacher had been employed, and he was left entirely without resources. Fortunately, however, among the passengers in the vessel in which he sailed, was Mrs Greene, the widow of the celebrated general, who had given him an invitation to spend some time at her residence at Mulberry Grove, near Savannah; and on learning his disappointment, she benevolently insisted upon his making her house his home, until he had prepared himself for the bar, as was his intention.

Whitney had not been long in her family before a complete turn was given to his views. A party of gentlemen, on a visit to Mrs Greene, having fallen into a conversation upon the state of agriculture among them, expressed great regret that there was no means of cleansing the green seed cotton, or separating it from its seed, remarking, that until ingenuity could devise some machine which would greatly facilitate the process of cleansing, it was in vain to think of raising cotton for market. "Gentlemen," said Mrs Greene, "apply to my young friend Mr Whitney: he can make any thing." She then conducted them into a neighbouring room, where she showed them a number of specimens of his genius. The gentlemen were next introduced to Whitney himself; and when they named their object, he replied that he had never seen either cotton or cotton seed during his life. But the idea was engendered; and it being out of season for cotton in the seed, he went to Savannah, and searched among the warehouses and boats until he found a small portion of it. This he carried home, and set himself to work with such rude materials and instruments as a Georgia plantation afforded. With these resources, however, he made tools better suited to his purpose, and drew his own wire, of which the teeth of the earliest gins were made, which was an article not at that time to be found in the market of Savannah. Mrs Greene and Mr Miller, a gentleman who, having first come into the family of General Greene as a private tutor, afterwards married his widow, were the only persons admitted into his workshop, who knew in what way he was employing himself. The many hours he

spent in his mysterious pursuits afforded matter of great curiosity, and often of raillery, to the younger members of the family. Near the close of the winter, the machine was so nearly completed as to leave no doubt of its success. Mrs Greene then invited to her house gentlemen from different parts of the state; and on the first day after they had assembled, she conducted them to a temporary building which had been erected for the machine, and they saw with astonishment and delight that more cotton could be separated from the seed in one day, by the labour of a single hand, than could be done in the usual manner in the space of many months.

We learn from the *Encyclopædia Americana* that the machine which Mr Whitney thus constructed, consisted chiefly of a process of circular saws, which by a rotatory motion dragged the cotton betwixt wires, leaving the seeds to fall to the bottom, while the cotton so cleaned was carried off by a rotatory brush playing upon the saws. An invention so important to the agricultural interest, and, as it has proved, to every department of human industry, could not long remain a secret. The knowledge of it soon spread through the state; and so great was the excitement on the subject, that multitudes of persons came from all quarters of it to see the machine; but it was not deemed prudent to gratify their curiosity until the patent right had been secured. So determined, however, were some of the populace to possess this treasure, that neither law nor justice could restrain them; they broke open the building by night, and carried off the machine. In this way the public became possessed of the invention; and before Mr Whitney could complete his model and secure his patent, a number of machines were in successful operation, constructed with some slight deviation from the original, with the hope of evading the penalty for violating the patent right. A short time after this, he entered into partnership with Mr Miller, who, having considerable funds at command, proposed to him to become his joint adventurer, and to be at the whole expense of maturing the invention until it should be patented. If the machine succeeded in its intended operation, the parties agreed to share equally all the profits and advantages accruing from it. The instrument of their partnership bears date May 27, 1793.

Immediately afterwards, Mr Whitney repaired to Connecticut, where, as far as possible, he was to perfect the machine, obtain a patent, and manufacture and ship for Georgia such a number of machines as would supply the demand. On June 20, 1793, he presented his petition for a patent to Mr Jefferson, then secretary of state; but the prevalence of the yellow fever in Philadelphia, at that period the seat of government, pre-

vented his concluding the business until several months afterwards. We have not space sufficient at our disposal to give a satisfactory detail of the obstacles and misfortunes which for a long time hindered the partners from reaping those advantages from the invention which it should have procured for them, and which they had an ample right to expect. These difficulties arose principally from the innumerable violations of their patent right, by which they were involved in various, almost interminable, lawsuits. The legislature of South Carolina purchased, in 1801, their right for that state for the sum of fifty thousand dollars—a mere “song,” to use Whitney’s own phrase, “in comparison with the worth of the thing; but it was securing something.” It enabled them to pay the debts which they had contracted, and divide something between them. In the following year, Mr Whitney negotiated a sale of his patent right with the state of North Carolina, the legislature of which laid a tax of two shillings and sixpence upon every saw (and some of the gins had forty saws) employed in ginning cotton, to be continued for five years, which sum was to be collected by the sheriffs in the same manner as the public taxes; and after deducting the expenses of collection, the proceeds were faithfully paid over to the patentees. No small portion, however, of the funds thus obtained in the two Carolinas, was expended in carrying on the fruitless lawsuits which it was deemed necessary to prosecute in Georgia. A gentleman who was well acquainted with Mr Whitney’s affairs in the south, and sometimes acted as his legal adviser, observed, that in all his experience in the thorny profession of the law, he had never seen a case of such perseverance under such persecution; “nor,” he adds, “do I believe that I ever knew any other man who would have met them with equal coolness and firmness, or who would have obtained even the partial success which he had.”

There have indeed been but few instances in which the author of such inestimable advantages to a whole country as those which accrued from the invention of the cotton gin to the Southern States, was so harshly treated, and so inadequately compensated, as the subject of this sketch. He did not exaggerate when he said that it raised the value of those states from fifty to one hundred per cent. “If we should assert,” said judge Johnson, “that the benefits of this invention exceed *one hundred millions of dollars*, we can prove the assertion by correct calculation.” Besides the violations of his right, he had to struggle against the efforts of malevolence and self-interest to deprive him of the honour of the invention, which he did triumphantly. In 1803, the entire responsibility of the whole

concern devolved upon him, in consequence of the death of Mr Miller. In 1812, he made application to Congress for the renewal of his patent, but unfortunately without success. He set forth that his invention had been a source of opulence to thousands of the citizens of the United States; that, as a labour-saving machine, it would enable one man to perform the work of a thousand. Some years before, in 1798, Mr Whitney, impressed with the uncertainty of all his hopes founded on the cotton gin, had engaged in another enterprise, which conducted him, by slow but sure steps, to a competent fortune. This was the manufacture of arms for the United States, which he contracted for and furnished to a large amount.

In January 1817, he married the youngest daughter of Pierpont Edwards, late judge of the district court for the state of Connecticut. For the five subsequent years he continued to enjoy domestic happiness, a competent fortune, and an honourable reputation, when he was attacked by a fatal malady, an enlargement of the prostate gland, which, after causing great and protracted suffering, terminated his life on the 8th of January 1825. In person, Mr Whitney was considerably above the ordinary size, of a dignified carriage, and of an open, manly, and agreeable countenance. His manners were conciliatory, and his whole appearance such as to inspire respect. He possessed great serenity of temper, though he had strong feelings, and a high sense of honour. Perseverance was a striking trait in his character. Every thing that he attempted he effected as far as possible. In the relations of private life, he enjoyed the affection and esteem of all with whom he was connected.

JAMES TAYLOR.

THE application of steam to navigation, by which the interests of society have in recent times been so much advanced, appears to have been first conceived, about the year 1730, by a person named Jonathan Hulls, who, however, was not able to carry it into practical operation. After being dormant for nearly sixty years, and, indeed, the same as lost to the world, the idea once more occurred to a gentleman named Taylor, under circumstances which are about to be detailed.

Mr Taylor was born, May 3, 1758, at the village of Leadhills in Lanarkshire, and received the rudiments of his education at the academy of Closeburn. His inclinations in early life were divided between the clerical and medical professions;

but, while deliberating which to choose, his attention was accidentally diverted to an entirely different object. Mr Patrick Miller of Dalswinton, who had devoted himself for some time to mechanical pursuits, and was the inventor of the species of artillery called carronades, began, about the year 1785, to engage in a series of experiments and operations for applying paddle-wheels to vessels, rather with a view to extricating them from perilous situations against the impulse of wind and tide, than with any expectation that such machinery, driven, as he contemplated it to be, by human power alone, could be of use in ordinary navigation. In that year, having occasion for a preceptor to his two sons, he looked abroad for an individual, who, while performing the duties of that office, might also be able to assist him in his mechanical pursuits. His friend, Mr Fergusson of Craigdarroch, recommended to him Mr James Taylor, "as a man of general knowledge, with whom he might converse upon all subjects." Mr Taylor was then about twenty-seven years of age, and was passionately fond of philosophical pursuits, particularly in geology, mineralogy, chemistry, and mechanics. He entered at once into Mr Miller's views, and aided in the preparation of a double vessel, of sixty feet in length, with intermediate paddles, driven by a capstan, which Mr Miller tried in the Firth of Forth, in spring 1787, against a customhouse wherry, which it easily distanced. On this occasion Mr Taylor became convinced of the utility of the paddles; but observing that the men were much exhausted by their labour, he was equally convinced that a superior mechanical power was wanting, in order to realise the full value of the invention. Having communicated his thoughts to Mr Miller, he received from that gentleman the following answer:—"I am of the same opinion, and that power is just what I am in search of. My object is to add mechanical aid to the natural power of the wind, to enable vessels to avoid and to extricate themselves from dangerous situations, which they cannot do on their present construction: I wish also to give them powers of motion in time of calm. I am satisfied that a capstan well manned can effect this in part; but I want a power more extensively useful, which I have not been able as yet to attain. Now that you understand the subject, will you lend me the aid of your head, and see if you can suggest any plan to accomplish my purpose?"

Thus invited, Mr Taylor applied himself to the consideration of all the mechanical powers already in common use, but without being able to convince himself of the applicability of any of them. At length the steam-engine presented itself to him; and though he might be naturally supposed to have been

himself startled at the boldness of such a thought, he soon convinced himself of its being practicable. On suggesting it to Mr Miller, he found he had excited more astonishment at the novelty, than respect for the feasibility of the scheme. Mr Miller allowed the sufficiency of the power, but was disposed to deny that it could be applied, more particularly in those critical circumstances, to obviate which was the chief aim of his own project. Mr Taylor was not daunted by his objections, but, on the contrary, the more he thought of the project, the more convinced he became of its practicability. He represented to Mr Miller, that, if not applicable to purposes of general navigation, it might at least prove useful on canals and estuaries. After many conversations, the latter gentleman at length conceded so far to Mr Taylor's suggestion, as to request him to make drawings, for the purpose of showing how the engine could be connected with the paddle-wheels. Mr Taylor did so, and Mr Miller, being still further satisfied, though as yet, it appears, unconvinced, agreed to be at the expense of an experiment, provided it should not amount to a large sum, and that Mr Taylor should superintend the operations, as he candidly confessed he was a stranger to the use of steam. The two projectors were then at Dalswinton; but it was arranged that, when they should return to Edinburgh in the early part of winter, an engine should be constructed for the purpose. Part of the summer was employed by Mr Miller in drawing up a narrative of his experiments upon shipping, with a view to its being printed and circulated. This he submitted to Mr Taylor for the benefit of his correction; and, the latter gentleman observing that no mention had been made of the application of the steam-engine, "I have not done that inadvertently," answered Mr Miller, "but from a wish not to pledge myself to the public for a thing I may never perform: you know my intentions on that subject are as yet conditional." Mr Taylor replied, that he could hardly look upon them in that light, as he was satisfied that any expense which could attach to so small a matter would not prevent him (Mr Miller) from making the experiment; that he considered the mention of the steam-engine as of importance; and that it could be alluded to in such a manner as to pledge him to nothing. Mr Miller was convinced, and introduced an allusion to steam, as an agent he might perhaps employ for the propulsion of his vessels. Copies of the paper thus improved were transmitted to the royal family, the ministers, many of the leading members of both houses of Parliament, and to all the maritime powers in Europe, besides the President of the United States of America.

In November (1787) Mr Miller removed as usual to the capital, where his sons attended the university under the charge of Mr Taylor. The latter, having been empowered by his employer to proceed about the construction of an engine, recommended to Mr Miller's notice an ingenious young engineer named Symington, who had attempted some alterations upon the steam-engine, and was now residing in Edinburgh for his improvement in mechanics. It was agreed that Mr Symington should form an engine on his own plan, and that the experiment should be made in the ensuing summer upon the lake of Dalswinton. The construction of the engine occupied several months, and was not completed at the conclusion of that session of the university, so that Mr Taylor was detained in town, to superintend the operations, for some time after his pupils had returned with their father to the country. When all was ready, he proceeded with Mr Symington to Dalswinton, where, on the 14th of October (1788), the experiment was made in the presence of Mr Miller and a considerable concourse of spectators. The boat was a double one, and the engine, which had a four-inch cylinder, was placed in a frame upon the deck. The experiment was successful beyond the most sanguine wishes of any of the parties concerned. The vessel moved at the rate of five miles an hour, and neither was any awkwardness found in the connection of the engine with the wheels, nor hazard apprehended in any considerable degree from the introduction of a furnace into so inflammable a fabric. The experiment was repeated several times during the course of the few ensuing days, and always with perfect success, insomuch that the invention became a subject of great local notoriety.

Mr Miller now formed the design of covering his own and Mr Taylor's joint invention by a patent; but, in the first place, it was judged expedient, that experiments should be made with a vessel and engine more nearly approaching the common size. For this purpose, Mr Taylor went to the Carron Foundry, with his engineer, Mr Symington, and there, in the summer of 1789, fitted up a vessel of considerable dimensions, with an engine, of which the cylinder measured eighteen inches in diameter. In the month of November this was placed on the Forth and Clyde Canal, in the presence of the Carron committee of management, and of the parties chiefly interested. The vessel moved along very smoothly for a space beyond Lock Sixteen, when, on giving the engine full play, the flat boards of the paddles, which had been weakly constructed, began to give way; which put an end to the experiment. The paddles having been reconstructed, on a stronger principle,

another experiment was made on the 26th of December, when the vessel made easy and uninterrupted progress, at the rate of seven miles an hour. Except in speed, the performances on these occasions were as perfect as any which have since been accomplished by steam-vessels. The project was now conceived by all parties to have gone through a sufficient probation, so far as the objects of inland navigation were concerned.

On a review of expenses, Mr Miller found considerable cause of chagrin in their amount, which, chiefly in consequence, as he said, of the extravagance of the engineer, greatly exceeded what he had been led to expect. Of the blame which he bestowed upon Mr Symington, Mr Taylor, as the cause of that individual having been employed, came naturally in for a part ; and the two joint projectors appear to have been divided in opinion respecting the worth of Mr Symington's engines, Mr Miller railing at them as the least adapted to the purpose, while Mr Taylor defended them on the ground that the experiments had been in the highest degree successful. Whatever might have been the cause—whether disgust at these accidental circumstances, or indifference to a project of which he must have been conscious that an important part belonged to another man, or an assurance he is supposed to have now received, that the complexion of his political opinions would preclude the patronage of the government—Mr Miller henceforward showed little inclination to prosecute the scheme. He told Mr Taylor that he would require to be cautious before laying out any more money—he must devote a year or two, in the first place, to the improvement of his estate—it would be time enough then to resume their plan. Mr Taylor, whose charge over Mr Miller's children had ceased for some time, now entered into an engagement with the Earl of Dumfries, to superintend the workings of coal, lime, and other minerals on that nobleman's estate ; reserving to himself a liberty to attend on Mr Miller, whenever he should be inclined to proceed with their common project. After the lapse of two years, receiving no invitation from Dalswinton, he paid Mr Miller a visit there, and found him completely engrossed in some agricultural experiments, which, with the enthusiasm too often found in minds of an inventive and improving turn, he conceived for the time to be paramount to all others of every kind. Neither on this, nor any future visit, could Mr Taylor prevail on his former patron to resume their project : the cultivation of fiorine grass at last took such hold of the mind of Mr Miller, that, in the belief of Mr Taylor, no other object on earth could have withdrawn him from it.

In the year 1790, while the fame of the experiments was

still fresh in the public mind, Mr Taylor had some hope of introducing his invention with advantage on the Continent. Mr Fergusson, younger of Craigdarroch, in writing to his father from Paris, in the autumn of that year, had expressed his belief that Mr Taylor's scheme might be taken up in Germany, and threw out a series of queries for his own satisfaction as to its efficiency. On the 15th of August, Mr Taylor, then residing at Leadhills, received a letter from Mr Fergusson, senior, requesting him to come to Drumlanrig (where Mr Fergusson then was on a visit to the Duke of Queensberry), in order to see his son's letter. Mr Taylor answered Mr Fergusson's queries in a letter dated September 25th; and in a reply, dated Paris, October 12th, Mr Fergusson desired further explanations, mentioning at the same time that he had hopes of Mr Taylor's scheme being adopted by the emperor, in order to lessen the expense of navigation up the Danube, which, owing to the current, was very great. For some time Mr Fergusson exerted himself to attract the notice of the court of Vienna to the scheme; but all hopes of doing so were in time extinguished, in consequence of the hostilities which the emperor commenced against France. The correspondence, however, is valuable, as showing that two country gentlemen, neighbours of Mr Miller, and who must have known the report of the country respecting the origin of the invention, regarded Mr Taylor as the father of its principal part—the application of the steam—and addressed him as the individual properly entitled, as well as qualified, to carry the discovery into effect.

The indifference of Mr Miller, the direction of public attention to the war which soon after commenced, and the unfavourable situation of Mr Taylor, in an inland part of the country, and unable of himself to do any thing, conspired to throw the project for several years into abeyance. At length, in 1801, Mr Symington, who had commenced business at Falkirk, resolved to prosecute a design, in which he had already borne an active and serviceable part. Lord Dundas employed him to fit up a small experimental steam-vessel, which was tried on the Forth and Clyde Canal, but, causing much disintegration of the banks, was forbidden by the Company to be ever set in motion again. This vessel was laid up at Lock Sixteen, where it remained for a number of years. Mr Symington afterwards entered into terms with the Duke of Bridgewater for introducing steam-navigation on his grace's canal; but the death of his grace unexpectedly put an end to the negociation.

Some time after, Mr Fulton, from the United States of America, accompanied by Mr Henry Bell of Glasgow, when

on a visit to the Carron-works, waited on Mr Symington, and inspected the boat which he had fitted up for the Forth and Clyde Canal. The consequence was, that, in 1807, the former gentleman launched a steam-vessel on the Hudson, and, in 1812, Mr Bell another upon the Clyde, being respectively the first vessels of the kind used for the service of the public in the new and old hemispheres. Thus, after all the primary difficulties of the invention had been overcome—when the bark was ready, as it were, to start from the shore, and waited only for the master to give the word for that purpose—did two individuals, altogether alien to the project, come in and appropriate the honour of launching it into the open sea. Unquestionably, the merit of these individuals in overcoming many practical difficulties, is very considerable; yet it is clear that they were indebted for the idea to the previous inventions and operations of Messrs Miller and Taylor, and that, if the latter gentlemen had, in the one instance, been inclined, and in the other able, to carry their project into effect at the proper time, they would not have been anticipated in this part of the honour, any more than in the suggestion of the paddles and the engine.

It appears that Mr Taylor by no means sat tamely by, while Fulton and Bell were reaping the credit due to their labours. He repeatedly urged Mr Miller to renewed exertions, though always without success. When the vast importance of steam-navigation had become fully established, the friends of Mr Taylor, who was not in prosperous circumstances, urged upon him the propriety of laying his claims before the government, and soliciting a reward suitable to the magnitude and importance of the discovery. At last, in 1824, he was induced to draw up a statement of his concern in the invention of steam-navigation, which he printed, and addressed to Sir Henry Parnell, chairman of a select committee of the House of Commons, upon steam-boats. He hoped that this narrative might be the means of obtaining from the government some remuneration for the services he had performed to his country; but it had no such effect. Bowed down by infirmities, and the fruits of a long life of disappointments, this ingenious man died on the 18th of September 1825, in the 68th year of his age.

JOHN FRANCIS MARMONTEL.

JOHN FRANCIS MARMONTEL was born in the year 1723, in the obscure though picturesque village of Bort, which is situated on the river Dordogne, between the provinces of Auvergne and Limosin, and near the heart of France. The inhabitants of Bort were all nearly equal in station; they were peasants, cultivating their own very small farms, or carrying on some humble trade. The parents of Marmontel did not excel their neighbours in their rural wealth. They seem to have been rather in poor circumstances, and their son was first taught to read in a convent of nuns, from whose care he was afterwards transferred to that of the parish priest, the Abbot Vaisière, who taught children gratuitously from duty and inclination. This excellent man began and finished his useful and blameless career in the same village, where he regularly performed the duties of his office, and partook of no amusements but reading, walking, or a game at the bowls. To this amiable man Marmontel was indebted for an initiation in the rudiments of knowledge, and the principles of religion and morality. The mother of Marmontel was superior to her husband in intelligence, and an excellent woman in every domestic relation. By her persuasion her son was sent to the college of Mauriac, a seminary of the Jesuits, and where the expense of board and education was as low as five pounds a-year. Here Marmontel remained some time, and, urged by the eloquent exertions of his mother, and by the consciousness that his future subsistence must depend upon the cultivation of his mind, he spared no exertion to gain a superiority in attainments.

Having completed his education at Mauriac, he was next sent to Clermont, to occupy a situation in the business of a merchant; but not being able to arrange with his master as to the time he was to be allowed for study, he committed the rash action of giving up his place, and of throwing himself entirely upon his own resources, in order to prepare himself for the church. His means of subsistence were limited to a few crowns, but his spirit was independent and resolute. He established himself in a lodging suited to his circumstances, laid in a hermit's provision of bread, water, and prunes, and wrote to his father to state that his vocation for the church was decided, that he hoped to dispense with any further pecuniary aid, and requested only his consent and his blessing. His mother's powerful eloquence seconded his views; she was au-

thorised to communicate a full consent, and he immediately visited the master of the college at Clermont, requested to be employed as assistant-teacher, and gave, on examination, sufficient proofs of his fitness for the task. He received fair promises; but days and weeks passed on without performance, and his scanty means were nearly exhausted. It was not till he called on the master to take leave, for the purpose of trying his fortune at a rival institution of the Oratorians, that the Jesuits made exertions from the fear of losing him, which they had not made for the sake of his merit, or for charity. He obtained twelve pupils; and when only fifteen years old, he contrived, by making himself perfectly master of what he had to teach, and by a grave and consistent demeanour, to secure their respect and attention, though some of them were older than himself. For two years he diligently pursued his own studies, and was enabled to transmit little presents to his family from the surplus of his moderate income. He formed with three chosen friends a little book society, which contributed greatly to extend his knowledge of literature, and the limited amount of the fund was so far an advantage, as it confined the reading to select and standard authors. In one of his walks in the grounds of Beauregard, the country house attached to the bishopric of Clermont, he met with the venerable Massillon; the kind reception of this illustrious old man, his benevolent manner, the accent of a voice so celebrated for eloquence, made a pleasing and lasting impression on the memory of Marmontel.

At the close of the second year, his peaceable and happy career at Clermont was interrupted by the sudden death of his father. He hastened to his home on receiving the news, arrived at midnight, and in the midst of a mourning family, promised that he would act the part of a parent to his five younger brothers and sisters; a pledge which he faithfully and honourably redeemed. Anxiety and sorrow brought on a fever, and change of air being recommended during his convalescence, he went to reside for a time, and to study divinity, with the curate of the retired hamlet of Saint-Bonet. He afterwards undertook the tuition of the son of a nobleman in the neighbourhood, the Marquis de Linars. His final destiny was not yet decided: he was earnestly pressed by the Jesuits to enter into their order, and went to Toulouse for that purpose; but a letter from his mother placed the danger and misery of irrevocable vows in so strong a light, that he desisted. At the college at Toulouse he was fortunate enough to obtain pupils for a course of philosophical lectures, and to get a scholarship, which gave him a little income of ten pounds a-year and lodging. At Toulouse an annual meeting was held, called the

Floral Games, at which prizes, consisting of artificial flowers of gold or silver, were distributed with great ceremony to the authors of the best poems in various styles of composition. Marmontel became struck with a desire to secure some of these prizes, but the poem he produced was thought very indifferent, and was rejected. He was not, however, daunted; he sent his poem to Voltaire, then in the zenith of his fame, who returned a kind answer, and a present of his works: it was thus that a correspondence and friendship began, which lasted thirty-five years, and ended only with the life of Voltaire.

Marmontel was more successful in his subsequent poetic attempts; but, tired with his profitless life at Toulouse, he resolved on following out a profession which would liberally and permanently support him. Becoming alarmed at the responsibilities of the priestly office, he now abandoned his views as to the church, and, at the recommendation of Voltaire, proceeded to Paris, where an office under government was held out as of possible attainment. On his arrival in Paris (1745), the person on whom he had depended for a place had himself the day before lost his office, and Marmontel was left in a most destitute condition. He had fortunately, for amusement on his journey, translated Pope's *Rape of the Lock*, and it now proved a temporary resource in distress and disappointment; he sold the translation to a bookseller for about fifteen pounds; took apartments suited to his diminished hopes; practised the lessons of economy which he had learned in early life; and determined, by the advice of Voltaire, to write for the stage, as affording the best chance, at that time, of early remuneration and extensive fame. He was ignorant of the first rules of the art to which he looked forward for support and advancement in life; but he diligently studied the *Poetics* of Aristotle, the *Unities* of Corneille, and all the ancient and modern tragedians of eminence, in books borrowed from Voltaire: and after looking into history, to find the subject of a tragedy, he fixed upon Dionysius the Tyrant, the plot of which he formed at once, and began to versify the scenes without delay.

The right of general free admission to the theatre was liberally granted to him as a young author of talent and promise; and by constant attendance there, he was enabled to observe and discriminate those passages in plays of acknowledged merit, which produced the greatest effect upon the audience. Of his manner of living, a judgment may be formed by his own statement, that he subsisted for eight months upon the sum paid by the bookseller for his translation. On one occasion he went in the dusk of the evening to fill his pitcher with

water at a public fountain, from the actual want of means to pay the trifling demand of a common water-carrier. A periodical paper which he published in conjunction with Beauvin, his companion in his lodgings, in his poverty, and in his pursuits, produced little pecuniary advantage; and the prize which was awarded by the Royal Academy to one of his poems, proved a welcome, though but a temporary supply. His hopes were depressed, his circumstances were distressing, his days were anxious, his nights sleepless; he began to regret the tranquil and easy existence which he had enjoyed at Toulouse, and to lament, as many ambitious men have done, that he had quitted moderate but certain prospects for the distant chance of wealth and fame. The tide of his fortune was at its lowest ebb at this period of his life; but he was fortunately saved from the extremity of misery and from despair, by Madame Harenc, an intelligent, amiable, and friendly woman, who obtained for him the situation of domestic tutor to her grandson, the child of an East India director. The change of his circumstances from distress to comfort was as complete as it was sudden. Madame Harenc became, for the rest of her life, his confidential adviser and warm friend; his treatment was kind and liberal; his pupil was docile and well disposed; and the society which he met with was excellent. He was for the second time a successful competitor for the prize given by the Royal Academy for poetry, and during the year of his employment with his pupil, which he counted amongst the happiest in his life, he prepared his tragedy of *Dionysius* for the stage; the principal female part was sustained by Clairon, a young actress then rising into notice, and who afterwards became celebrated. A small latticed box over the stage was reserved for the author on the first representation of a new piece; and there, in trembling expectation, sat Marmontel, revolving in his anxious mind, before the curtain rose, the various consequences of success, or failure to himself and to his family. He was relieved from his painful dreams as the piece proceeded, by loud and general applause. It had then recently become the custom, at the close of a new and successful play, for the spectators in the pit to call aloud for the author, who was required to appear upon the stage, and to receive personally the plaudits of the house. This tribute, which is well suited to the feelings and character of the French, was paid to Marmontel, who had arisen from his bed in the morning, poor, full of solicitude, and obscure; and who at night went home to meet a small party of assembled friends at supper, gay, happy, celebrated, and comparatively rich.

The profits arising from a successful play in France were not

confined, as in England at the period, to the benefit of the performance for one or two nights and the copyright. Before the Revolution, whenever a play was acted in Paris, or in a provincial town, a certain sum was invariably reserved for the author, and placed to his account at a public office, from which he received it on application, without expense or difficulty. The profits of successful tragedies and comedies, therefore, formed an income for life, which was greater or less according to their number, and to the degree of estimation in which they were generally held by the public. Marmontel was now invited to the houses of the nobility and other persons of distinction, and his company sought for on every convivial occasion. We wish we were able to say that he resisted the vicious allurements which now beset his path; but this we are unable to do consistent with truth. He allowed himself to be seduced by improper indulgences, and dissipation soon produced its usual effects on the mental powers of Marmontel. He attempted some other tragedies, but they were coldly received, and his reputation was almost gone. This luckily brought him to his senses. He found on reflection that the path of frivolous amusement is not the right road to respectability and happiness. He renounced writing for the stage; solicited, and was fortunate enough to obtain, a place under government, which gave him a small salary, abundant leisure for study, and apartments at Versailles. Here he passed five years of comparative happiness, storing his mind with useful knowledge, and laying a foundation for his future literary reputation.

It was at this period of his life that he began to write his *Moral Tales*, and the incident which led to their publication is highly creditable to his character as a philanthropist. A literary paper entitled the *Mercury*, was conducted under the patronage of government, and the profits conferred on poor authors of merit. On one occasion the government applied to Marmontel to point out a deserving object of this kind of charity. With much kindness he mentioned an unfortunate man of genius named Boissy, who at the very moment was without the means of procuring food, and being too proud to beg, he had shut himself up in his house with his wife and son, the whole determined to perish together; their door was forced open by a friend, in time to save their lives. Boissy hereupon received, not merely a pension, but the privilege and property of the *Mercury*, which raised him at once from the lowest state of poverty to comfort and affluence. The permanence of these benefits depended, however, on the publication continuing to prove attractive; and Boissy, after expressing his warmest thanks for the kind interposition of his friend, requested the

aid of his pen to render the benefit fully available. Marmontel felt the necessity of prompt exertion; he passed a night of sleepless anxiety, during which he formed the first outline of a moral tale, and in the morning he wrote Alcibiades, which had the effect, when inserted in the Mercury, of greatly extending the demand for it. The author, whose name did not appear, had the pleasure, at a literary dinner, of hearing it attributed to Voltaire and Montesquieu; and, at the request of the happy Boissy, he afterwards wrote, for the same purpose, Soliman II., and the Scruple, with similar success. Such was the origin of that celebrated collection of tales, which should have been called *amusing*, rather than *moral*, and which rendered the name of Marmontel so familiarly known to the lovers of light reading throughout Europe. Boissy did not live long to enjoy his unexpected good fortune, and on his death the privilege of the Mercury was given to Marmontel, who had well deserved it, by his kindness to his predecessor, and by the talents with which he had contributed to its sale. On receiving this appointment, which threw him at once into literary society, and made composition again his regular occupation, he resigned his place and apartments at Versailles, and took up his abode in the house of Madame Geoffrin, a rich widow, who assembled at her dinner, twice in each week, the first authors and artists of Paris. The most gay and amusing member of this little society was the geometer D'Alembert.

Marmontel remained an inmate of this pleasant mansion for ten years, paying a remuneration for his apartment, that he might retain his feelings of independence, and admitted a welcome guest to every literary party. This happy kind of life was abridged in a very summary manner. On one occasion Marmontel endeavoured to amuse his neighbours by reciting some satirical verses, reflecting on the character of the Duke of Aumont, a proud and vain courtier. The result was an immediate imprisonment in the Bastille. In this vile place of confinement he was treated with more than usual attention; he was allowed the use of books, pens, ink, and paper, and he occupied himself with a prose translation of Lucan, which saved him from all the irksome feelings of restraint and solitude. He was liberated after a confinement of ten days; but the privilege of publishing the Mercury, which had procured him an income of more than seven hundred pounds a-year, was taken from him as a further punishment. Temporary distress gave a new spring to his mental exertions; he finished his translation of Lucan's Pharsalia, and his French Poetics; and in 1763, he was admitted a member of the Royal Academy. Fortunately, his literary distinctions did

not estrange him from his own near connexions. He had done much to assist his father's family, and he continued to support his aged female relatives at Bort. He was attacked with a pulmonary complaint, and endeavouring to divest the sense of pain by some literary undertaking, his attention was directed to the subject of Belisarius, on which he composed a popular story. Recovering from his illness, he next wrote the story of the Incas, which was equally well received, and has been also translated into English. These historical tales increased the fame of Marmontel, and, on the death of Duclos, he was appointed, without solicitation, to the honourable place of historiographer of France. He had always considered the house of his sister at Saumur as a home and retreat in old age; but she and her children died in succession, of the pulmonary complaint which had proved fatal to many of his family, and her widowed husband resigned his place when he had lost her, and returned to reside at his native village. Marmontel, thus disappointed in his plan, and dreading a time when he might be cheerless, solitary, and dependent, became attached to the amiable, accomplished, and beautiful niece of his friend Morellet. He was fifty-four, and Mademoiselle de Montigny only eighteen; but, notwithstanding this unusual disparity, she consented to be his wife, and there never was a happier marriage. On his first arrival at Paris, he had been tempted, by opportunity and example, into dissipation; now he became a domestic and exemplary husband and father. He composed a grammar and treatises on logic, metaphysics, and morals, for the instruction of three sons who survived him, and laboured with great earnestness to make them respectable and intelligent members of society. His income continued to increase after his marriage, from the extended sale of his works, and particularly his Moral Tales. He enjoyed many years of happiness in the midst of his friends, and in the bosom of his family; but he suffered, in common with others, from the Revolution, which covered his country with terror and confusion. Nearly the whole of his property in the funds was lost; he fled from Paris in August 1792, to Evreux, in Normandy, and thence to another part of the country, where he resided in a small cottage. In 1797, he was elected a member of the legislature, and specially instructed to defend the Catholic religion. He died of apoplexy on the 31st December 1799, aged seventy-six.

The biography of Marmontel carries with it a triple moral. He rose to eminence by the force of genius, economy, and perseverance; he sank into contempt by giving way to the allurements of dissipation; and after rising, by another effort of his intellectual powers, from this state of infamy into public

estimation, he lost the means of comfortable subsistence, and was thrown into prison for satirising an individual with whom he ought to have had no concern. From these circumstances, we are taught to appreciate the value of juvenile industry and rectitude ; to be watchful over our conduct when we have attained a state of prosperity ; and, lastly, to suit our words and actions to the period or the country in which we live—at least doing nothing to offend public prejudice, or to call down the vengeance of power, when personal ruin, unaccompanied with any public good, is to be the only result.

JAMES LACKINGTON.

“ I WAS born (says this remarkable individual, in the memoir which he has written of himself) at Wellington, in Somersetshire, on the 31st day of August 1746. My father, George Lackington, was a journeyman shoemaker, and a person of such dissipated habits, that the whole charge of rearing his family fell upon my mother, a woman of extraordinary industry, and one who had a very hard fate in being allied to a husband who spent upon liquor all that he could earn. Never did I know or hear of a woman who worked and lived so hard as she did to support eleven children ; and were I to relate the particulars, they would not gain credit. I shall only observe, that, for many years together, she worked nineteen or twenty hours out of every twenty-four. Out of love to her family, she totally abstained from every kind of liquor, water excepted. Her food was chiefly broth, which was little better than water and oatmeal, and her children did not fare much better. When I reflect on the astonishing hardships and sufferings of so worthy a woman, and her helpless infants, I cannot but denounce, in the strongest possible terms, that abominable love of drinking, by which my father, as is too often the case, neglected his family, and brought upon himself premature death.

Before my father had fallen into these disgraceful and expensive habits, I was put for two or three years to a day-school, kept by an old woman, who taught me to read the New Testament ; but my career of learning was soon at an end, when my mother became so poor that she could not afford the sum of twopence per week for my schooling. Besides, I was obliged to supply the place of a nurse to several of my brothers and sisters ; the consequence of which was, that what little I had

learned was presently forgot. Instead of learning to read, &c., it very early became my chief delight to excel in all kinds of boyish mischief, and I soon arrived to be captain and leader of all the boys in the neighbourhood. From this profitless course of life I was rescued at fourteen years of age, when a Mr Bowden, a respectable shoemaker at Taunton, seven miles from Wellington, having seen and taken a liking to me, proposed taking me as an apprentice, offering, at the same time, to seek no premium, and find me in every thing. This offer being accepted by my father, I was immediately bound for seven years to Mr George and Mrs Mary Bowden, as honest and worthy a couple as ever carried on a trade. They carefully attended to their shop six days in the week, and on the Sunday went with their family to a place of public worship.

I had been an apprentice about twelve or fifteen months, when, having been led to attend the prelections of a Methodist preacher, a religious fervour overspread my mind, and engrossed all my faculties. The desire I now had of talking about religious mysteries answered a valuable purpose—it caused me to embrace every opportunity to learn to read, so that I could soon read the easy parts of the Bible, and every leisure minute was so employed. In the winter I was obliged to attend my work from six in the morning till ten at night. In the summer half year I only worked as long as we could see without candle; but, notwithstanding the close attention I was obliged to pay to my trade, yet for a long time I read ten chapters in the Bible every day. I also learned and read many hymns. I had such good eyes, that I often read by the light of the moon, for my master would never permit me to take a candle into the room.

In the fourth year of my apprenticeship, my master died, but as I had been bound to my mistress as well as my master, I was, of course, an apprentice still; but after my master's death I obtained more liberty of conscience, so that I not only went to hear the Methodist sermons, but was admitted into their society, and I believe they never had a more devout enthusiastical member. For several years I regularly attended every sermon, and all their private meetings; but, alas! my good feelings at length suffered interruption. The election for two members of Parliament was strongly contested at Taunton just as I attained my twenty-first year; and being now of age, the six or seven months which I had to serve of my apprenticeship were purchased of my mistress by some friends of two of the contending candidates, so that I was at once set free in the midst of a scene of riot and dissipation. Here I had nearly sunk for ever into meanness, obscurity, and vice; for

when the election was over, I had no longer open houses to eat and drink in at free cost; and having refused bribes, I was nearly out of cash. I began the world with an unsuspecting heart, and was tricked out of about three pounds (every shilling I was possessed of) and part of my clothes, by some country sharpers. Having one coat and two waistcoats left, I lent my best waistcoat to an acquaintance, who left the town and forgot to return it."

Lackington seems now to have fallen into profligate habits, which he afterwards looked back upon with deep regret. However, he continued to work hard, at Bristol and other places, as a journeyman shoemaker, and spent a good deal of spare money on all kinds of books, particularly works of poetry, for which he imbibed a strong attachment. After describing the course of life he led for some time, he thus proceeds:—

"I had not long resided a second time with my good Bristol friends, before I renewed my correspondence with an amiable young woman, whom I had formerly known, named Nancy Smith. I informed her that my attachment to books, together with travelling from place to place, and also my total disregard for money, had prevented me from saving any, and that, while I remained in a single unsettled state, I was never likely to accumulate it. I also pressed her very much to come to Bristol to be married, which she soon complied with; and married we were, at St Peter's Church, towards the end of the year 1770, near seven years after my first declaring my attachment to her.

We kept our wedding at the house of my friends, the Messrs Jones, and retired to ready-furnished lodgings, which we had before provided, at half a crown per week. Our finances were but just sufficient to pay the expenses of the day; for the next morning, in searching our pockets (which we did not do in a careless manner), we discovered that we had but one halfpenny to begin the world with. It is true, we had laid in eatables sufficient for a day or two, in which time we knew we could by our work procure more, which we very cheerfully set about, singing together the following lines of Dr Cotton:—

Our portion is not large indeed,
But then how little do we need,
For Nature's calls are few;
In this the art of living lies:
To want no more than may suffice,
And make that little do.

After having worked on stuff-work in the country, I could not bear the idea of returning to the leather branch, so that

I attempted and obtained employment in Bristol ; but better work being required there than in country places, I was obliged to take so much care to please my master, that at first I could not get more than nine shillings a-week, and my wife could get but very little, as she was learning to bind stuff shoes, and had never been much used to her needle ; so that, what with the expense of ready-furnished lodgings, fire, candles, &c., we had but little left for purchasing provisions. Having, besides, to pay off a debt of near forty shillings, it took two months to make up that sum, during nearly the whole of which time it was extremely severe weather ; and yet we made four shillings and sixpence per week pay for the whole of what we consumed in eating and drinking. Strong beer we had none, nor any other liquor, water excepted ; and instead of tea, or rather coffee, we toasted a piece of bread ; at other times we fried some wheat, which, when boiled in water, made a tolerable substitute for coffee ; and as to animal food, we made use of but little, and that little we boiled and made broth of. But we were quite contented, and never wished for any thing that we had not got.

Unfortunately, our health failed under these circumstances, and we were both together taken so ill as to be confined to our bed ; but the good woman of the house, our landlady, came to our room, and did a few trifles for us. We had in cash two shillings and ninepence, half a crown of which we had carefully locked up in a box, to be saved as a resource on any extraordinary emergency. This money supported us two or three days, in which time I recovered, without the help of medicine ; but my wife continued ill nearly six months, and was confined to her bed the greatest part of the time. It is impossible for words to describe the keenness of my sensations during this long term ; yet, as to myself, my poverty, and being obliged to live upon water-gruel, gave me not the least uneasiness—it was the necessity of being continually in the sight and hearing of a beloved object, a young and innocent wife, who lay in a state of acute suffering.

Thinking that nothing could relieve my wife but change of air to her native place, I removed from Bristol to Taunton ; but here I could not procure so much work as I could do, and, with a view of having a better price for my work, I resolved to visit London ; and as I had not money sufficient to bear the expenses of both to town, I left her all the money I could spare, and took a place on the outside of the stage-coach, and the second day arrived at the metropolis, in August 1773, with two shillings and sixpence in my pocket. Next morning I procured a lodging in Whitecross Street, at the house of an

acquaintance, and Mr Heath, in Fore Street, supplied me with plenty of work.

In a month I saved money sufficient to bring up my wife, and she had a tolerable state of health : of my master I obtained some stuff shoes for her to bind, and nearly as much as she could do. Having now plenty of work and higher wages, we were tolerably easy in our circumstances, more so than ever we had been, so that we soon procured a few clothes. My wife had all her life before done very well with a cloth cloak, but now I prevailed on her to have one of silk : until this winter, also, I had never found out that I wanted a greatcoat, but now I made that important discovery. At this time we were so lucky as to receive a small legacy of ten pounds, left by one of my wife's relations, and this assisted us to purchase some household goods ; but as we had not sufficient to furnish a room, we worked hard and lived still harder, so that in a short time we had a room furnished with articles of our own. It would not be possible for any one to imagine with what pleasure and satisfaction we looked round the room and surveyed our property. I believe that Alexander the Great never reflected on his immense acquisitions with half the heartfelt enjoyment which we experienced on this capital attainment. After our room was furnished, as we still enjoyed a better state of health than we did at Bristol and Taunton, and had also more work and higher wages, we often added something or other to our stock of wearing apparel. Nor did I forget the old bookshops, but frequently added an old book to my small collection ; and I really have often purchased books with the money that should have been expended in purchasing something to eat. On one occasion, when presented with half a crown to buy a joint for our Christmas dinner, I could not resist the temptation of purchasing a copy of Young's Night Thoughts with the money, and my wife thought, on reflection, that I had acted wisely ; for had I bought a dinner, we should have eaten it to-morrow, and the pleasure would have been soon over ; but should we live fifty years longer, we had the Night Thoughts to feast upon.

Some time in June 1774, as we sat at work in our room, a friend called and informed me that a little shop and parlour were to be let in Featherstone Street, adding, that if I was to take it, I might there get some work as a master. I without hesitation told him that I liked the idea, and hinted that I would sell books also. He then asked me how I came to think of selling books. I informed him that until that moment it had never once entered into my thoughts, but that, when he proposed my taking the shop, it instantaneously occurred to

my mind, that for several months past I had observed a great increase in a certain old bookshop, and that I was persuaded I knew as much of old books as the person who kept it. I further observed, that I loved books, and that if I could but be a bookseller, I should then have plenty of books to read, which was the greatest motive I could conceive to induce me to make the attempt. My friend on this assured me that he would get the shop for me, which he did, and, to set me up in style, recommended me to the friends of a person recently deceased, and of whom I purchased a bagful of old books, chiefly divinity, for a guinea.

With this stock, and some odd scraps of leather, which, together with all my books, were worth about five pounds, I opened shop on Midsummer-day 1774, in Featherstone Street, in the parish of St Luke, and nothing could exceed the pleasure I felt in surveying my little shop with my name over it. At that time Mr Wesley's people had a sum of money, which was kept on purpose to lend out, for three months without interest, to such of their society whose characters were good, and who wanted a temporary relief. To increase my little stock, I borrowed five pounds out of this fund, which was of great service to me. In our new situation we lived in a very frugal manner, often dining on potatoes, and quenching our thirst with water; being absolutely determined, if possible, to make some provision for such dismal times as those of sickness and shortness of work, which we had been frequently involved in before, and could scarcely help expecting not to be our fate again.

I lived in this street six months, and in that time increased my stock from five pounds to twenty-five pounds. This immense stock I deemed too valuable to be buried in Featherstone Street, and a shop and parlour being to let in Chiswell Street, No. 46, I took them. This was at that time, and for fourteen years afterwards, a very dull and obscure situation, as few ever passed through it besides Spitalfields weavers on hanging days, proceeding towards Tyburn; but still it was much better adapted for business than Featherstone Street. A few weeks after I came into this street, I bade a final adieu to the gentle craft, and converted my little stock of leather and tools into books. My business now increased considerably, many persons buying books from me under the idea of purchasing cheaper than they could at respectable shops; but a considerable number of these kind of customers, which I had in the beginning, forsook my shop as soon as I began to appear respectable, and keep things in better order. I went on prosperously until some time in September 1776, when I was sud-

denly taken ill of a dreadful fever; and eight or ten days after, my wife was seized with the same disorder. I was a considerable time ill, but at length recovered; my wife, however, sank under the disease, and her loss involved me in the deepest distress.

During the illness of my wife and myself, we were gratuitously and kindly attended by a young lady in the neighbourhood, who, by the misfortunes of her father, had been reduced to keep a school, and work very hard at plain work, by which means she kept her father from want. Now, this old gentleman died shortly afterwards; and being acquainted with his daughter's goodness, I concluded that so amiable a daughter was very likely to make a good wife. I also knew that she was immoderately fond of books, and would frequently read until morning, which turn of mind in her was the greatest of all recommendations to me. I embraced the first opportunity, therefore, to make her acquainted with my mind, and being no strangers to each other, there was no need of a formal courtship; so I prevailed on her to be my wife, and we were married on the 30th of January 1776."

Some time previously, Lackington abandoned the Methodist connection. From the period of his second marriage, success attended him in all his business arrangements, as a dealer in old books; and he mentions, that nothing did him so much good as the practice of selling only for ready money. He also adopted the plan of publishing catalogues of his books: the first catalogue, he says, contained twelve thousand volumes, and the second, put forth in 1784, thirty thousand volumes. From buying small quantities of books, he rose to be able to purchase whole libraries, reversions of editions, and to contract with authors for manuscripts of works. This extensive and lucrative business now enabled him to live in a very superior style. "I discovered," says he, "that lodgings in the country were very healthy. The year after, my country lodging was transformed into a country house, and, in another year, the inconveniences attending a stage-coach were remedied by a chariot." As usual in such cases, the envy of the world pursued Lackington for his supposed extravagance; but it appears he was strictly honourable in trade, and spent only what was his own. He assures his readers that he found the whole of what he was possessed of in "*small profits, bound by industry, and clasped by economy.*" In 1792, the profits of his business amounted to £5000.

The success of Lackington enabled him, in 1798, to retire from the bookselling business with a competent fortune, the reward of his own ingenuity, industry, and tact, in the way

of reprinting books at a cheap rate, leaving Mr George Lackington, a relation, at the head of the firm, which still exists in the neighbourhood of Finsbury Square. Lackington at first took up his residence in Gloucestershire. Subsequently he purchased two estates in Alvestone, on one of which was a genteel house, in which he made various improvements, and took up his abode, keeping a carriage, and living in great style. In his retirement, he again joined himself to the Methodists, for whom he built and endowed different chapels, and, till the last, expressed his great sorrow for the manner in which he had spoken of that body in his published memoirs. He finally retired to Budleigh Sulterton, in Devonshire; but soon after, his health declined, and he became subject to epileptic fits. At length his decease took place on the 22d of November 1815, in the 70th year of his age.

JOSEPH HAYDN.

THE early history of the celebrated Haydn exemplified all those struggles of merit and genius against circumstances, which we have so often held up to admiration, in the lives of men whose labours have conferred the most solid benefits upon their kind.

He was the son of a poor wheelwright at Rohrau in Lower Austria, where he was born in the year 1732. Without any scientific knowledge of music, his father could play simple airs upon an old harp, to his own and his wife's singing. The natural talent for music which he thus proved himself to possess, was inherited by three sons, including Joseph, all of whom became distinguished musicians, though none attained the great eminence of the subject of this memoir. The inherent gift was first awakened in the mind of Joseph, by the tones of his father's harp, which he used to accompany with his voice at a very early period of childhood. Having thus attracted the notice of the schoolmaster of Hamburg, who was related to the family, he was taken by him at six years of age, and regularly instructed not only in music, but in reading, writing, and the Latin grammar. He had begun to play on several instruments, when, the chapel-master of the court and cathedral of Vienna coming to visit the dean of Hamburg, young Haydn was brought to exhibit before him; and the consequence was, that an offer was made to take him as one of the children of the choir. This he gladly accepted, and for eight years, amidst privations and chastisements, he occupied that humble situation. Here, how-

ever, he made a rapid progress in music, and began to exercise his talents as a composer, throwing off, before he was well acquainted even with the rudiments of harmony, a great number of symphonies, trios, sonatas, and other pieces, in which the dawnings of an extraordinary genius were evident. These boyish compositions wanted, as might be expected, the regularity and consistency necessary for perfect success in compound music; yet there appeared in them a wildness of nature, and a luxuriance of fancy, which bespoke what he might in after times produce, when that wildness and luxuriance were corrected by attention and study.

His voice in boyhood was of such clearness and compass, that it became fashionable for the great people of Vienna to go to the cathedral to hear him. At sixteen, when the usual change took place in his voice, he suddenly became altogether unfit to fulfil this duty. A boyish frolic was then made the pretext by his master for turning him penniless and unrecommended into the street, where he passed a long and dreary November night upon a stone bench. It is a fortunate thing in the world, that the mercilessness of one man rarely fails to call forth the benevolence of another, if not of many others: Haydn was found in this forlorn condition by a very indigent musician, who, taking pity on him, afforded him a place at his frugal board, and a corner of a garret without a fireplace, furnished with a bed of sacking, a crippled chair and table, and a decayed harpsichord. Thus, in the midst of penury and suffering, Haydn began a career which was to terminate in the sublimest triumphs of genius. Modest and patient, he was indebted in a great measure to mere industry for his ultimate success. While supporting himself as well as he could by teaching, he studied the theory of his art, in its more complicated and abstract forms, from the works of Matheson, Heinichen, and others: for the practice he resorted to the works of Emanuel Bach, a musician to whom he ever afterwards acknowledged the greatest obligations.

The first public employment he acquired was that of organist to the friars of the Misericordia, but the salary was so small, that he was obliged to perform in other places to obtain mere necessities. At the age of eighteen he composed for a German baron a quartetto, which succeeded; and from that time he was the author of a number of trios and sonatas, which were often published by the scholars to whom he gave them, without consulting him, or giving him a share in the profit. His reputation by degrees made its way, and in 1760, at the age of twenty-eight, he was just raised above indigence, by being appointed maestro di capella in second to Prince Esterhazy. He

now fulfilled an engagement which he had made in his days of penury, to marry the daughter of the musician who had befriended him. His music, on account of its originality and difficulty, for a time was not generally relished in Germany, and underwent criticism. Some went so far as even to write pamphlets against his works, complaining of them as wild, flighty, and trifling, and as tending to introduce new musical doctrines, which till then had been totally unknown in that country. The only notice that Haydn deigned to take of the scurrility and abuse which was thus heaped upon him, was to publish lessons written in imitation of the several styles of his adversaries. In these their peculiarities were so closely copied, and their extraneous passages so inimitably burlesqued, that they all felt keenly the poignancy of his musical wit, and were silent.

At the death of Werner, his superior in place, Haydn succeeded to the office of chief director of music to Prince Esterhazy, and he spent thirty years in the obscure Hungarian village belonging to that family, passing only two or three months at Vienna when the prince came to court.

The national music of the Germans is rough, bold, and grand; and although they do not display the softness of the Italians, it is generally acknowledged that in instrumental music, and particularly in that for wind instruments, they have excelled all other nations. The introduction of a more refined manner was reserved for Haydn, who, in originality, pathos, and beautiful air, surpassed all rivalry. Besides numerous pieces for instruments, he composed many operas for the Esterhazy theatre, and which were also performed in the theatres of Vienna and Berlin. He also excelled in church music, being only approached in this department by his brother Michael. An oratorio which he composed in 1775, under the title of *Il Ritorno di Tobia*, for the benefit of the widows of musicians, is as favourite a piece in Germany as Handel's *Messiah* is in England. His instrumental *Passions*, in parts, is among the most exquisite of his serious productions. It consists entirely of slow movements on the subject of the last seven sentences of the Saviour, as recorded by the evangelists. These strains are so truly impassioned, and full of heartfelt grief and dignified sorrow, that, although the movements are all slow, the subjects, the keys, and effects, are so new and so different, that a real lover of music will feel no lassitude, nor wish for lighter strains to stimulate attention. In Haydn's allegros, there is a general cheerfulness and character of good humour, which exhilarates every hearer. His adagios, again, are often so sublime in ideas and in harmony, that, though played by inarticulate instruments, they have an irresistible effect upon

the softer feelings. His power of expression was, indeed, universal, and alike exemplified in symphonies, sonatas, concertos, quartets, operas, oratorios, and instrumental pieces of every class. Burney, in introducing an account of his music, speaks of him as "the admirable and matchless Haydn, from whose productions I have received more pleasure late in my life, when tired of most other music, than I ever received in the most ignorant and rapturous period of my youth, when every thing was new, and the disposition to be pleased undiminished by critics or satiety." As a performer, Haydn is allowed to have been extremely neat, elegant, and impressive.

Although the fame of Haydn excited no small jealousy among his contemporaries, there were two, and these the greatest of them all, namely, Gluck and Mozart, who, with the generosity seldom found wanting in successful talent, warmly declared the friendly and admiring feelings with which they regarded him. In return he did justice to their merits, and at the death of the latter, was extremely affected, declaring the loss irreparable.

In the service of Prince Esterhazy, Haydn might be considered as in circumstances extremely favourable to the full developement of his powers, being at the head of a great orchestra, and wholly free from the troubles and cares of the world. During that long period, his life was regular, and constantly employed. He rose early in the morning, dressed himself very neatly, and placed himself at a little table by the side of his piano-forte, where he remained with the interruption only of his meals. In the evening he attended rehearsals, or the opera, which was performed four times a week in the prince's palace. Occasionally he amused himself with hunting, and gave the rest of his hours of relaxation to the society of his friends. Living in the utmost retirement, he himself was perhaps the only musical man in Europe who was ignorant of the celebrity of Joseph Haydn. The first homage he received consisted of a commission from a Parisian amateur to compose a piece of vocal music, accompanied with some select passages of Lulli and Rameau to serve as models. He returned for answer, with sly simplicity, that he was Haydn, and not Lulli or Rameau; and that if music after the manner of those great composers was wanted, it should be asked from them or their pupils; but that, as to himself, he unfortunately could write music only after the manner of Haydn.

In 1790, Mr Salomon, who had undertaken to give concerts in London, made proposals to Haydn to assist in conducting these concerts, and to compose pieces for them, offering him

L. 50 for each concert. Haydn accepted the offer, and arrived in England at the age of fifty-nine. He remained in London about twelve months, during which time he composed some of the finest of his works, particularly the magnificent orchestral compositions so well known as the "Twelve Symphonies for Salomon's Concerts," and the beautiful English canzonets, the poetry of which was written by Mrs Hunter.

Haydn used to relate several whimsical anecdotes of his stay in London. A captain of the navy came to him one morning, and asked him to compose a march for some troops he had on board, offering him thirty guineas for his trouble, but requiring it to be done immediately, as the vessel was to sail next day for Calcutta. As soon as the captain was gone, Haydn sat down to the piano-forte, and the march was ready in a few minutes. Feeling some scruples at gaining his money so very easily, Haydn wrote two other marches, intending first to give the captain his choice, and then to make him a present of all the three, as a return for his liberality. Next morning the captain returned, and asked for his march. "Here it is," said the composer. The captain asked to hear it on the piano-forte; and having done so, laid down the thirty guineas, pocketed the march, and walked away. Haydn tried to stop him, but in vain—the march was very good. "But I have written two others," cried Haydn, "which are better; hear them, and take your choice." "I like the first very well, and that is enough," answered the captain, pursuing his way down stairs. Haydn followed, crying out, "But I make you a present of them." "I won't have them!" roared the seaman, with a nautical asseveration, and bolted out at the street door. Haydn, determined not to be outdone, hastened to the Exchange, and, discovering the name of the ship and her commander, sent the marches on board with a polite note, which the captain, surmising its contents, sent back unopened. Haydn tore the marches into a thousand pieces, and never forgot this liberal English humorist as long as he lived.

While he resided in London, Haydn enjoyed two high gratifications; that of hearing the music of Handel, with which, like most of his countrymen at that time, he was very slightly acquainted, and that of being present at the concerts of ancient music, which were then splendidly patronised, and carried on with great talent. He witnessed the annual celebration in St Paul's cathedral, which is attended by the children belonging to the charity schools in the metropolis; and was affected even to tears by the psalms sung in unison by four thousand infantine voices. One of these tunes he jotted down in his

memorandum-book ; and he used afterwards to say, that this simple and natural air gave him the greatest pleasure he had ever received from music.

Haydn returned to England in 1794, having been engaged by Gallini, the manager of the Opera House, to compose an opera for that theatre, on the subject of Orpheus and Eurydice. But there was some difficulty about opening the theatre, and Haydn left England without having finished his opera. During this visit, he had the honour of the diploma of a doctor of music conferred on him by the University of Oxford.

After his return from England, he undertook his great work, the Creation. While in London, he had been inspired with the most profound admiration for the music of Handel, and especially the Messiah ; and it is to this feeling that the world is certainly indebted for the Creation. He began this work in 1795, when he was sixty-three years of age, and finished it in the beginning of 1798, having been constantly employed upon it for more than two years. When urged by his friends to bring it to a conclusion, he used to say calmly, "I spend a long time upon it, because I intend it to last a long time." In the Lent of the above year, it was performed for the first time, in the Schwartzenberg palace, at the expense of the Dilettanti Society of Vienna, before the flower of the literary and musical society of that city ; the composer himself conducting the orchestra. It was received with an enthusiasm which soon spread throughout all Europe. It was while the First Consul of France was on his way to witness its first performance in Paris, that the memorable attempt was made to destroy him by means of an "infernal machine." It was performed about the same time in London ; and from that period to the present, it has formed a part of every great performance of sacred music.

Two years after the appearance of the Creation, Haydn produced another work, of a similar form, called the Seasons, the words of which are taken from Thomson. This work was also performed for the first time in the Schwartzenberg palace, and received with the warmest applause. It did not, however, make so rapid or strong an impression as that which was made by the Creation. Its subject is not so sublime, nor are its beauties so obvious and striking.

This work terminated Haydn's musical career. By the labours of his long life, he had acquired a moderate competency ; and after his last return from England, he purchased a small house and garden in one of the suburbs of Vienna, where he resided for the remaining years of his life. Soon after he had taken possession of his little home, he received a communica-

tion from the National Institute of France, informing him that he had been nominated an associate of that body ; an honour by which he was deeply affected. He now began to sink rapidly under the pressure of age and infirmities. He seldom quitted his house and garden ; and his enfeebled mind began to be haunted with the double fear of poverty and disease. The visits of his friends would rouse him, and, in conversing with them, he occasionally showed his former cheerfulness and vivacity. When he was told that the French Institute, in 1805, supposing him to be dead, had performed a *requiem* for him, he said pleasantly, "If these kind gentlemen had given me notice of my death, I would have gone myself to beat the time for them." But these gleams were brief and transient, and he sank into his usual state of torpor and depression.

While he was in this state, his friends in Vienna resolved to have a performance of the *Creation*. It took place in the palace of Prince Lobkowitz, with an orchestra of one hundred and sixty performers, and before an audience of more than fifteen hundred of the nobility and gentry of the Austrian capital. Haydn, feeble as he was, expressed his desire to appear once more in the presence of that public for whom he had laboured so long, and from whom he had received so many marks of favour and esteem. He was carried into the room in an easy chair, attended by the Princess Esterhazy, and other ladies, who went to the door to meet him, and was placed in the middle of the seats occupied by the most illustrious personages in Vienna, amid the flourishes of the orchestra, and the plaudits of the audience. The performance began ; and the feelings of the assembly, inspired by the sublime music, were raised to enthusiasm by the aspect of the venerable composer, who now appeared among them to take farewell of them for ever. An eminent physician, who sat near him, having remarked that his legs were not sufficiently protected from the cold, the finest and most costly shawls were instantly pulled from the shoulders of their fair wearers who surrounded him, and employed in making him warm and comfortable. The old man shed tears at this mark of affection. At the end of the first act, feeling himself exhausted with fatigue and emotion, he requested to be taken home. Before reaching the door, he desired the persons who were bearing him in his chair to stop ; and having first taken farewell of the audience by bowing his head, he turned to the orchestra, and, with his eyes raised to heaven, and full of tears, uttered a parting blessing on the old companions of his labours.

Haydn did not long survive this touching scene. The tranquillity of his last days was disturbed by the alarms of war.

In the struggle between Austria and France in 1809, the Emperor Napoleon carried his army to the very gates of Vienna. During this dreadful campaign, Haydn was greatly agitated. He was constantly inquiring for news, and used to sit at his piano-forte, singing with his feeble and trembling voice, "God preserve the Emperor!" On the night of the 10th of May, the French reached Schoenbrunn; and next morning, from a position within a few yards of Haydn's house, they fired fifteen hundred cannon-shot and shells upon the city, which the old man's imagination represented to him as given up to fire and sword. Four bombs fell close to his dwelling, and their explosion filled his little household with terror. He roused himself, and, getting up from his chair, rebuked his servants with dignity for their want of firmness. But the effort was too much for him; he was seized with a convulsive shivering, and carried to bed. His strength continued to diminish; yet, on the 26th of May, he caused himself to be placed at his piano-forte, where he again sang the national hymn, three times over, with all his remaining energy. It was the song of the swan. While he still sat at the piano-forte, he fell into a state of stupor, and at last expired on the morning of the 31st of May, aged seventy-eight years and two months. He was privately interred in the suburb of Gumpendorff, in which he resided, Vienna being in the possession of the French, and the Requiem of Mozart was performed for him in the Scotch church of the city. His heir was a blacksmith or farrier, to whom he left 38,000 florins, deducting 12,000, which he bequeathed to his two faithful servants.

Such was the life of this great, and, it may be added, good man. He was a stranger to every evil and malignant passion, and, indeed, was not much under the influence of passion of any sort. But his disposition was cheerful and gentle, and his heart was brimful of kindly affections. He was friendly and benevolent, open and candid in the expression of his sentiments, always ready to acknowledge and aid the claims of talent in his own art, and, in all his actions, distinguished by the most spotless integrity. Such is the account of him given by all those who knew him best; and they add, as the most remarkable feature of his character, that strong and deeply rooted sense of religion, which is the only solid foundation of moral excellence. Haydn's piety was not a mere feeling, capable, as is often the case with worldly men, of being excited for the moment by circumstances, and dying away when the external influence is removed: it was an active principle, which guided the whole tenor of his life and conduct. His sacred music was exalted by the existence, in his mind, of those de-

vout sentiments which it is the object of sacred music to express.*

JOSIAH WEDGEWOOD.

THIS ingenious and amiable man, to whom England is largely indebted for many valuable improvements in pottery, was the younger son of a Staffordshire potter, who possessed a small entailed estate. He was born in July 1730, and received from his father a very limited education, and a very small patrimony. At an early period of life he applied himself to his father's profession, which was then limited to the production of only the coarsest kinds of earthenware.

The art of fabricating vessels from clay, which was known to the Egyptians and other nations of antiquity, and also to the Chinese (who made the superior kind called *China-ware* so early as the fifth century), was practised at Burslem and some adjacent places in Staffordshire, in, and perhaps before, the reign of Charles II. The possession of extensive fields of clay, and the unfitness of the soil for agriculture, seem to have been the original causes of establishing the earthenware manufacture in this part of England. At the time mentioned, the art was in a very rude state, the ware being all extremely clumsy, the colours both coarse and very unskilfully applied, the glazing consisting entirely of lead ore, or calcined lead, a substance in a high degree pernicious to human life. Some improvements were introduced about the year 1690 by two brothers from Holland, named Ellers, who settled at Burslem, but were obliged soon after to return to their native country, in consequence of the fumes of their furnaces having led to a quarrel with their neighbours. These improvements were not lost sight of among the Staffordshire potters, and another was in time added by a Mr Astbury, who suggested the admixture of calcined flint with clay, while a greater precision was given to the movements of the potter's wheel by an ingenious mechanic named Alsager. The Staffordshire ware continued nevertheless, at the beginning of the reign of George

* This article is compiled from Aiken's General Biographical Dictionary, Burney's History of Music, and Mr Hogarth's excellent publication, "Musical History, Biography, and Criticism," from which the whole of the latter moiety has been extracted.

III., to exhibit little elegance, and to be of very limited utility. The paraphernalia of the tea-table were regularly imported from China. The articles of the dinner-table were generally of metal among the higher ranks, and of wood among the lower. The porcelain which had been produced at Dresden since an early period of the century—the invention of a German chemist named De Botticher—was then little known in Britain. And almost the only ware of a superior order, besides *China*, which had obtained a footing in the country, was an improved kind which for a few years had been imported from France. It was reserved for Mr Wedgewood first to apply effectually the principles of science and of taste to this department of our national manufactures.

The subject of our memoir had entered into business on his own account, in partnership with a Mr Bentley, and, by the assistance of that gentleman, and of an eminent chemist named Chisholme, whom he liberally rewarded, had made considerable improvements in the composition, form, and colour of the common wares, when, in 1763, he attracted general notice to a species of ware, greatly superior in beauty and consistence to any ever before manufactured in England. This new pottery was composed of clay obtained from Devonshire and Dorsetshire, mixed with ground flint, and coated with a vitreous glaze. He called it *Queen's Ware*, in honour of the youthful consort of George III., to whom he presented a service of it, and who became its patroness. By his own taste and that of his partner, a classical elegance was given to this manufacture, which not only rendered it the most beautiful of potteries, but furnished models for a variety of articles in other materials, so as to exert a considerable influence over the national taste. The demand for the Staffordshire ware increased proportionally, and rendered it an important branch of commerce, both domestic and foreign, and tables in the remotest parts of Europe were in time furnished with elegant services of queen's ware, of great variety of designs. By varying and repeating his experiments in regard to this pottery, Mr Wedgewood discovered modes of making other kinds of fine ware or porcelain, equally elegant and useful. Of these the most important were the following:—1. A species resembling porphyry, Egyptian pebble, and other beautiful stones of the silicious and crystalline kind. 2. *Jasper*, a white porcelain rivalling the productions of antiquity, which soon became known throughout Europe: it possessed properties similar to the stone of the same name, susceptible of a high polish, resisting all the acids, and bearing without injury a very strong fire; together with the singular property of receiving from metallic calces the

same colours which those calces impart to glass or enamels in fusion ; a distinction possessed by no porcelain of ancient or modern composition. 3. *Basaltes*, a black unglazed porcelain, which, like the preceding, bore a strong similarity to the natural stone, could receive a fine polish, resist acids, and bear a very strong fire. 4. White unglazed porcelain, of a smooth wax-like appearance, of properties similar to basaltes. 5. Bamboo, a cane-coloured substance, resembling in its characteristics the kind last described. 6. An unglazed porcelain, almost as hard as agate ; a property which, with its impenetrability by acids and every known liquid, makes it peculiarly well adapted for the formation of mortars and other chemical vessels.

In some particular instances, Mr Wedgwood executed works rivalling the highest productions of art. An antique vase, of about ten inches in height, with white figures raised on a dark ground, and of the most admirable composition and workmanship, which had been found in the sixteenth century near Rome, and was supposed to be the cinereal urn of the Emperor Severus, had found its way through the celebrated Barberini cabinet to the museum of the Duchess of Portland, at whose death, we may mention, it was sold to the Duke of Marlborough for nine hundred and eighty guineas. Mr Wedgwood applied his ingenuity to the production of an exact imitation of this antique, and succeeded so well that the duchess purchased it at one thousand guineas, being more than what the original eventually realised in an open sale. This work of art has since been known by the name of the *Portland vase*. Our artist subsequently obtained subscriptions of fifty pounds each for fifty similar vases, forming an aggregate sum of L.2500 ; but so expensive was the process (five hundred guineas being paid to the modeller alone), that Mr Wedgwood was a loser by the speculation. He also obtained a particular celebrity by the execution of several cameos, a kind of art which no English potter had formerly thought of attempting. One of these represented a slave in chains, with the inscription, "Am not I a man, and a brother ?" being intended as an appeal to public feeling against the slave-trade. Of this he distributed several hundred copies gratuitously. Another consisted of a figure of Hope, attended by Peace, Art, and Labour, composed of clay from Botany Bay, to which colony he sent many of them, to show the inhabitants what the materials of their country could produce, and to stimulate their industry. It may be also stated that Mr Wedgwood made great improvements in the potter's lathe, and in the machinery for reducing the clay to powder, and for separating the grosser parts from the fine.

Nor is Mr Wedgewood known only for the improvement of his own art. His studies embraced chemistry and general science, and the world was indebted to him for the invention of a pyrometer, or measurer of great degrees of heat, which, though now superseded by instruments of greater accuracy, displayed a great degree of ingenuity. He had observed that alumina, one of the chief substances employed in his manufacture, became diminished in weight and bulk in proportion to the degree of heat to which it was exposed. There being then no available means of measuring those degrees of heat which exceeded the range of the mercurial thermometer, he applied himself to the construction of an instrument consisting of pieces of clay of determinate sizes, and a graduated apparatus for measuring their bulk with accuracy. One of the pieces was exposed to the heat, and the temperature was judged of by the contraction. An account of the instrument, and of his experiments connected with it, was presented by him, in 1782, to the Royal Society, of which, as well as of the Antiquarian Society, he was a member. His pyrometer has latterly fallen into disuse, in consequence of the extreme difficulty of procuring pieces of clay of uniform composition, and from its having been found that time has an influence on the contraction of the clay pieces, the longer continuance of a low degree of heat producing the same contraction as a higher degree of heat continued for a shorter time.

As a proper consequence of talent exerted on useful and grateful objects, Mr Wedgewood soon realised an ample fortune, part of which he spent in the erection of a mansion at no great distance from his manufactory, which he named Etruria, in allusion to the distinction of that part of ancient Italy in the fabrication of earthenware. He had also the satisfaction of witnessing a prodigious increase in the population and wealth of the district he inhabited, of a great share of which he was the author. The *Potteries*, as the district is now called, embracing an area of eight miles by six, even some years ago, contained fourteen manufacturing towns, and 30,000 inhabitants, being the most populous part of the British empire. The ideas of Mr Wedgewood being all of a liberal character, he became the active promoter of every improvement that he thought would tend to the benefit of the country. By his means, good roads were constructed throughout the district, and he had a principal share in the measures for carrying through Parliament the act for the Grand Trunk Canal, connecting the Trent and the Mersey, in opposition to a powerful landed interest, which at that time had not freed itself from a narrow jealousy of commerce.

In private life Mr Wedgewood was as estimable as in his public character. The qualities of his mind were so remarkably well combined and balanced, that no one seemed to predominate in any great degree over the rest, unless perhaps we are to except the singular power which he possessed, and which had been one of the sources of his success—the invaluable power of concentrating his attention, and keeping it steadily fixed, on one object of pursuit. To uncommon firmness of mind, and independence of spirit, he joined unwearying benevolence, and the elegance of manners, courtesy, and deference, which suited the elevated society with which he was conversant, and the celebrity and consequence he had attained. In his dealings he was not only strictly correct, but refined and delicate. He so far overcame the disadvantages of the want of education, as to speak and write his native language with purity and precision, and to display a well-furnished and cultivated mind. He died, greatly lamented, at his house of Etruria, in January 1795, leaving two sons, who carried on his business with talent, and to an extent worthy of their descent.

ALEXANDER WILSON.

THIS extraordinary man, who, from being originally an operative weaver, became, by his own unaided exertions, one of the most celebrated ornithologists of his day, was born in Paisley on the 6th of July 1766. His father was a distiller, poor in fortune, though said to have been endowed with an active and sagacious mind. He was so unfortunate as to lose his mother at the early age of ten, and was left without the tender and judicious care which a mother alone can give. On attaining his thirteenth year, he was bound apprentice for three years to his brother-in-law, to learn the business of a weaver, and on the expiry of this term continued to work as a journeyman for four years more.

The employment of a weaver was by no means congenial to the disposition and propensities of the future ornithologist; but as his father, though a highly respectable man in character, was in very indifferent circumstances, young Wilson had no choice left, but was compelled to adopt that which was readiest and most easily attained. It is much to his credit, however, that though he must have felt—indeed it is certain that he did feel, and that at a very early age—that he was fitted for higher things, he yet diligently laboured at the humble but honour-

able calling to which his destiny had appointed him, and never allowed such feelings to interrupt his industry. At this period of his life he indulged in a predilection for poetical composition, and wrote several pieces which appeared in the Glasgow Advertiser; but in these juvenile attempts he was not very successful, nor was he ever at any after period fortunate in this department of literature, though his poetical productions are certainly not without very considerable merit.

Having continued at the loom, as already said, for four years as a journeyman weaver, at the end of this period he abandoned the business to accompany his brother-in-law, who had commenced travelling merchant or pedlar, in a tour through the eastern districts of Scotland—an employment which, though it could scarcely claim any sort of precedence in point of rank over that which he had left, he yet gladly embraced, as it at once released him from the confinement and dull monotony of his former occupation, and permitted him to indulge in one of his strongest propensities, which was to ramble over hill and dale, and to enjoy, unfettered and unrestrained, the beauties of his native land. With such a disposition it is not to be wondered at that as a pedlar he made much greater progress in the study of nature, and perhaps of man, and in the extending of his ideas, than in the improvement of his fortunes. The acquisition of money was no object with him, and of course, as it was not sought, it was not found.

At this time Burns was in the zenith of his fame, and Wilson, tempted by his success, resolved to publish his poems—the accumulated pieces of preceding years—and in 1789, contracted with a printer in Paisley for this purpose, but was obliged to abandon the idea for the time, for want of means to carry it into effect. He however published them some time afterwards, with the title of “Poems, Humorous, Satirical, and Serious,” at his own risk, after having in vain endeavoured to procure subscribers, and carried them about with him in his hawking expeditions, but met with little or no success in the sale of them. Finding that he could make nothing of either poetry or traffic, he returned once more to his loom, at which he was again quietly seated, when he learned that a debating society in Edinburgh had proposed for discussion the question whether Ferguson or Allan Ramsay had done most honour to Scottish poetry. Seized with an ambition to distinguish himself on this occasion, he borrowed from a friend the poems of Ferguson, which he had never read before, and in a few days produced a poem which he entitled the “Laurel Disputed,” and in which he awarded the palm to Ferguson. With this poem in his pocket, he proceeded to Edinburgh, and recited it

before the audience assembled to hear the discussion. Before he left Edinburgh, he also recited in public two other poems, and acquired by all a considerable degree of respect and favour. He likewise contributed occasionally, about this time (1791), to a periodical work called "The Bee." But though Wilson's poetical efforts procured him some reputation, they did nothing for him in the way of advancing his worldly interests. The volume of poems which he published in 1789, at which period he was only twenty-two years of age, went through two small editions in octavo, but without yielding the author any pecuniary advantage. His literary reputation was, nevertheless, considerably increased by the publication of his "Watty and Meg," a poem in the Scottish dialect, and of such decided merit, that it was universally ascribed to Burns on its first appearance, which was in 1791. It is a droll and satirical description of a drunken husband and scolding wife, and shows that the author possessed a fund of broad humour.

Having soon after this embroiled himself in some serious disputes which took place in his native town between the operative weavers and their employers, by writing some severe personal satires on certain individuals of the latter class, he found his residence in Paisley no longer compatible with his comfort or happiness, and therefore determined on proceeding to America. But before taking his departure, he called on those persons whom he had satirised, expressed his sorrow for what he had done, and solicited their forgiveness. This circumstance is a pleasing proof of the generosity of his nature—that which follows a very striking one of the determination of his character. Although he had resolved on going to America, he did not possess a single shilling wherewith to pay his passage. To supply this desideratum, he instantly abandoned every other pursuit, and for four months laboured with incessant industry at his loom, confining the expense of his living during this time to one shilling in the week. The result of this perseverance and rigid economy was, that at the end of the period named, he found himself in possession of the requisite sum, but nothing more. With this he set out for Portpatrick on foot, crossed to Belfast, and there engaged a passage to America; and he arrived at New York on the 14th of July 1794, with only a few shillings in his pocket, and even these were borrowed from a fellow passenger.

Up till this period, and indeed for several years after, Wilson exhibited no indications of a genius or even predilection for that particular department of natural history in which he afterwards acquired so brilliant a name, but it is said, that immediately after landing in America, and while proceeding from

the place of his disembarkation to Newcastle, his attention was strongly excited by the specimens of the feathered inhabitants of the New World which he met with, and that he was particularly delighted with the splendour of the plumage of a red-headed woodpecker, which he shot by the way. Whether or not his genius received on this occasion that bent which afterwards led to such splendid results, it is certain that he always retained a lively recollection of the feelings of surprise and delight with which he for the first time contemplated the beauties of the American woodpecker.

For many years after his arrival in America, Wilson's condition underwent but little improvement. He found there nearly the same difficulties to contend with, and prospects nearly equally cheerless, with those he had left behind him in his native land. The first employment he obtained was with a copperplate printer in Philadelphia, but this he soon relinquished, and betook himself to his original trade, weaving. This he again resigned for the pack; but his success as a pedlar was not sufficient to induce him to continue by it, and he abandoned it also, and commenced teacher; making his first experiment in this laborious and somewhat precarious profession near the town of Frankford in Pennsylvania. While in this situation, he in a great measure repaired the defects of his early education, by close and unremitting study in various departments of science and knowledge, and, as has often been the case, by instructing others he taught himself. He afterwards removed to Milestown, where he remained for several years, adding a little to the limited income arising from his school, by surveying land for farmers.

At the end of this period he applied for and obtained the appointment of schoolmaster of the Union School in the township of Kingsessing, within a few miles of Philadelphia; and it is from this period that his history in the pursuit of the bird creation commences, although he yet entertained that branch of natural history only in common with others, and by no means confined his studies to the feathered tribes. His attention was equally engrossed by a host of other animals; and his apartment, as described by himself, had the appearance of Noah's ark, being crowded with opossums, squirrels, snakes, lizards, and other animals. Finding his ignorance of drawing a serious desideratum in his new pursuit, he applied to the acquisition of this art with such diligence and determination of purpose, that he in a very short time succeeded in obtaining a command of the pencil, that enabled him to sketch from nature with great fidelity and spirit. It was not, however, till the year 1803, that Wilson conceived the magnificent design of his

all the humiliations to which such a mission must of necessity have frequently subjected him, be taken into the account. From this tour he returned to New York in March 1809.

Two hundred copies only of the first volume of the *Ornithology* had been printed, but it was now thought advisable to throw off three hundred more, which was accordingly done; and, in the meantime, Wilson assiduously employed himself in preparing the second volume for the press, although he neither had yet benefited to the extent of a single dollar by the publication of his work, nor was likely to do so. The second volume appeared in January 1810; and immediately after its appearance, the author set out on another tour in quest of support and patronage. This time he penetrated into the western part of the states, or valley of the Ohio and Mississippi. At Pittsburg, he succeeded beyond his expectations in getting subscribers; and after ascertaining that the roads were such as to render a land journey impossible, he bought a small boat, which he named the *Ornithologist*, intending to proceed in it down the Ohio to Cincinnati, a distance of more than five hundred miles. Some advised him not to undertake the journey alone; but he had made up his mind, and only waited, exploring the woods in the interval, till the ice had left the stream. At length the time arrived for his departure on this inland voyage. His provision consisted of some biscuit and cheese, and a bottle of cordial, given him by a gentleman in Pittsburg; one end of the boat was occupied by his trunk, greatcoat, and gun; and he had a small tin vessel, with which to bale his boat, and to drink the water of the Ohio. Thus equipped, he launched into the stream. The weather was calm, and the river like a mirror, except where fragments of ice were floating down. His heart expanded with delight at the novelty and wildness of the scene. The song of the red-bird in the deep forests on the shore, the smoke of the various sugar-camps rising gently along the mountains, and the little log-huts, which here and there opened from the woods, gave an appearance of life to a landscape which would otherwise have been lonely and still. He could not consent to the slow motion of the river, which flowed two miles and a half an hour; he therefore stripped himself for the oar, and added three miles and a half to his speed. Our traveller's lodgings by night were less tolerable than his voyage, as he went down the desolate stream. The first night was passed in a log-cabin, fifty-two miles below Pittsburg, where he slept on a heap of straw.

Having reached Cincinnati, he there got a few subscribers for his work, and then proceeded to Louisville, where he sold his boat.

He next walked a distance of seventy-two miles to Lexington, whence he travelled to Nashville, exploring on his journey some of the remarkable caverns of Kentucky. He had thoughts of extending his tour to St Louis; but after considering that it would detain him a month, and add four hundred miles to his journey, without perhaps adding a single subscriber to his list, he gave up the plan, and prepared for a passage through the wilderness towards New Orleans. He was strongly urged not to undertake it, and a thousand alarming representations of hardship and danger were set before him; but, as usual, he gave fears to the winds, and quietly made preparations for the way. He set out on the 4th of May, on horseback, with a pistol in each pocket, and a fowling-piece belted across his shoulder. During this adventurous journey he suffered severely from the heat of the sun, and all the changes of the weather. His exposure by night and day brought on an illness, which he with difficulty surmounted. He had occasion to travel among the Indians, who, it seems, treated him with great kindness; and though dreadfully worn out with fatigue, he enjoyed the journey very much. He reached New Orleans on the 6th of June, and shortly embarked in a vessel for New York, and from thence he proceeded to Philadelphia, where he arrived on the 2d of August 1810.

Wilson now applied himself with unwearied industry to the preparation of the third volume of his Ornithology. At this time, he says that the number of birds which he had found, and which had not been noticed by any other naturalist, amounted to forty. Between this period and 1812, he made several other journeys throughout the country, partly with the view of promoting the sale of his publication, and partly to procure materials for his study, an object which he never lost sight of—seldom travelling, whatever might be the immediate or ostensible cause of his changing place, without his fowling-piece.

In the year above named, he received a gratifying proof of the estimation in which his merits were beginning to be held. This was his being chosen a member of the Society of Artists of the United States; and in the spring of the following year, he was admitted to the American Philosophical Society in Philadelphia. But this extraordinary man was not destined to see either the completion of his meritorious labours, or to enjoy the triumph of achieving all that he designed. The excessive labour and fatigue of both body and mind, to which he had for many years subjected himself, gradually undermined his constitution, and prepared it to yield to the first act of indiscretion to which it should be exposed; and this, unfortunately, now very soon occurred.

While sitting one day with a friend, he caught a glimpse from the window of a rare bird, for which he had long been vainly looking out. The instant he saw it, he seized his gun, rushed out of the house in pursuit of it, and after an arduous chase, during which he swam across a river, succeeded in killing it; but he succeeded at the expense of his life. He caught a violent cold; this was followed by dysentery, which carried him off after an illness of ten days' continuance. He died on the morning of the 23d August 1813, in the forty-seventh year of his age, and was buried in the cemetery of the Swedish church, in Southwark, Philadelphia. A plain marble monument, with an inscription, intimating his age, the place and date of his birth, and of his death, marks the place of his sepulture.

Wilson had completed the seventh volume of his Ornithology before he died, and was engaged, when seized with his last illness, in collecting materials for the eighth. At this he laboured with an assiduity and unintermitting industry which called forth the remonstrances of his friends. His reply, while it seems to indicate a presentiment of his premature fate, is at the same time characteristic of his extraordinary enthusiasm and diligence, "Life is short," he would say on these occasions, "and nothing can be done without exertion." Nor is a wish, which he repeatedly expressed to a friend some time before his death, less characteristic of his amiable nature and deep admiration of the works of his Creator. This wish was, that he might be buried *where the birds might sing over his grave.*

His person is described as having been tall and handsome, rather slender than robust; his countenance expressive and thoughtful, and his eye intelligent. Unfortunately for himself, the speculation in which he engaged with so much ardour yielded him no remuneration; for he had committed the serious error of issuing his work on too expensive a scale. From the publication he derived no profits whatever; and the heavy expenses he had to incur in his journeys, as well as his ordinary outlays, were only paid by the wages he received in the capacity of colourer of his own plates. Of the many active men whose biographies are before the public, there is not perhaps one whose life presents such a heroic resolution in the pursuit of science as Wilson. Although this most indefatigable genius did not live to enjoy the reward of his diligence, he certainly anticipated what has come to pass—that his work would always be regarded as a subject of pride by his adopted country—as it certainly is by the country which gave him birth—and would secure immortal honour for him whose name it bears.

WILLIAM EDWARDS.

THIS ingenious man was a native of Glamorganshire, in Wales, where he was born in the year 1719. He had the misfortune to lose his father, who was a farmer, when he was only two years old; but his mother continued to hold the farm, and was, in this manner, enabled to bring up her family, consisting of two other sons and a daughter, besides William, who was the youngest. Her other sons, indeed, were soon old enough to take the chief part of her charge from her hands. William was taught, in the meantime, to read and write Welsh; and this was all the education which he seems to have received. When about the age of fifteen, he first began to employ himself in repairing the stone fences on the farm; and in this humble species of masonry he soon acquired uncommon expertness. The excellent work he made, and the dispatch with which he finished it, at last attracted the notice of the neighbouring farmers; and they advised his brothers to keep him at this business, and to let him employ his skill, when wanted, on other farms, as well as their own. After this he was for some time constantly engaged, and he regularly added his earnings to the common stock of the family.

Hitherto the only sort of building which he had practised, or had seen practised, was merely stone-masonry without mortar; but at length it happened that some masons came to the parish to erect a shed for sheeing horses, near a smith's shop. William contemplated the operations of these architects with the liveliest interest, and he used to stand by them for hours while they were at work, taking note of every movement which they made. A circumstance which at once struck him, was, that they used a different description of hammer from what he had been accustomed to employ, and perceiving its superiority, he immediately procured one of the same kind for himself. With this he found he could build his walls both more rapidly and more neatly than he had been wont to do. But it was not long after he had, for the first time in his life, an opportunity of seeing how houses were erected, that he undertook to build one himself. It was a workshop for a neighbour, and he performed his task in such a manner as gained him great applause. Very soon after this, he was employed to erect a mill, by which he still further increased his reputation. He was now accounted the best workman in that part of the country, and being highly esteemed for integrity and fidelity to his engagements, as well as for his skill, he had as much employ-

ment in his line of a common builder as he could undertake. In his twenty-seventh year, however, he was induced to engage in an enterprise of a much more difficult and important character than any thing which he had hitherto attempted. Through his native parish runs a river called the Taff, which flows into the estuary of the Severn. It was proposed to throw a bridge over this river at a particular spot, where it crossed the line of an intended road; but to this design difficulties of a somewhat formidable nature presented themselves, owing both to the great breadth of the water, and the frequent swellings to which it was subject. Mountains, covered with wood, rose to a considerable height from both its banks, which first attracted and detained every approaching cloud, and then sent down its contents in torrents into the river. Edwards, however, undertook the task of constructing the proposed bridge, though it was the first work of the kind in which he had ever engaged. Accordingly, in the year 1746, he set to work, and in due time completed a very light and elegant bridge, of three arches, which, notwithstanding that it was the work of both an entirely self-taught and an equally untravelled artist, was acknowledged to be superior to any thing of the kind in Wales. So far his success had been as perfect as any thing which could be desired. But his undertaking was far from being yet finished. He had, both through himself and his friends, given security that the work should stand for seven years, and for the first two years and a half of this term, all went on well. There then occurred a flood of extraordinary magnitude; not only the torrents came down from the mountains in their accustomed channels, but they brought along with them trees of the largest size, which they had torn up by the roots; and these, detained as they floated along by the middle piers of the new bridge, formed a dam there: the waters, accumulating behind, at length burst from their confinement, and swept away the whole structure. This was no light misfortune in every way to poor Edwards; but he did not suffer himself to be disheartened by it, and he immediately proceeded, as his contract bound him to do, to the erection of another bridge. He now determined, however, to span the whole width of the river, by a single arch of the unexampled magnitude of one hundred and forty feet from pier to pier. He finished the erection of this stupendous arch in 1751, and had only to add the parapets, when he was doomed once more to behold his bridge sink into the water over which he had raised it, the extraordinary weight of the masonry having forced up the keystones, and, of course, at once deprived the arch of what sustained its equipoise. Heavy as was this second disappointment to the hopes of the

young architect, it did not shake his courage any more than the former had done. The reconstruction of his bridge, for the third time, was immediately begun with unabated spirit and confidence. Still determined to adhere to his last plan of a single arch, he had now thought of an ingenious contrivance for diminishing the enormous weight which had formerly forced the keystone out of its place. In each of the large masses of masonry, called the *haunches* of the bridge, being the parts immediately above the two extremities of the arch, he opened three cylindrical holes, which not only relieved the central part of the structure from all over-pressure, but greatly improved its general appearance in point of lightness and elegance. This bridge was finished in 1755—the whole undertaking having occupied the architect about nine years in all—and it has stood ever since.

This bridge, at the time of its erection, was the largest stone arch known to exist in the world. Since that time, stone arches of extraordinary dimensions have been built—such as the five arches composing the splendid Pont de Neuilly over the Seine, near Paris, the span of each of which is a hundred and twenty-eight feet—the island bridge over the Liffey, near Dublin, which is a single arch of a hundred and six feet in width—the bridge over the Tees, at Winston, in Yorkshire, which is also a single arch of a hundred and eight feet nine inches in width, and which was built by John Johnson, a common mason, at a cost of only five hundred pounds—and the nine elliptical arches, each of a hundred and twenty feet span, forming the magnificent Waterloo Bridge, over the Thames, at London.

At Bishop-Wearmouth, in the county of Durham, there is a *cast iron* bridge, over the river Wear, the chord of the arch of which is two hundred and forty feet long. The Southwark or Trafalgar Bridge, over the Thames at London, is at present the finest iron bridge in the world. It consists of three arches. The chord of the middle arch is two hundred and forty feet long. There is a *timber* bridge over the Delaware, near Trenton, in New Jersey, which is the segment of a circle three hundred and forty-five feet in diameter. The timber bridge over the Schuylkill, at Philadelphia, is of the extraordinary span of three hundred and forty feet. The bridge over the Piscataqua, near Portsmouth, New Hampshire, is the segment of a circle six hundred feet in diameter.

The bridge built by Edwards over the Taff, buttressed as it is at each extremity by lofty mountains, while the water flows in full tide beneath it, at the distance of thirty-five feet, presents an aspect very striking and magnificent.

This bridge spread the fame of Edwards over all the country. He afterwards built many bridges in South Wales, having their arches formed of segments of much larger circles, and consequently much more convenient. He found his way to this improvement entirely by his own experience and sagacity; as, indeed, he may be said to have done in regard to all the knowledge which he possessed in his art. Even his principles of common masonry, he used himself to declare, he had learned chiefly from his studies among the ruins of an old Gothic castle in his native parish.

Edwards was likewise a farmer to the end of his days. Such, moreover, was his unwearied activity, that, not satisfied with his week-day labours in these two capacities, he also officiated on the Sabbath as pastor to an Independent congregation, having been regularly ordained to that office when he was about thirty years of age, and holding it till his death. He accepted the usual salary from his congregation, considering it right that they should support their minister; but instead of putting the money into his own pocket, he returned it all, and often much more, in charity to the poor. He always preached in Welsh, though early in life he had made himself acquainted with the English language, having acquired it under the tuition of a blind old schoolmaster, in whose house he once lodged for a short time, while doing some work at the county town of Cardiff. In this effort he showed all his characteristic assiduity.

Edwards died in the year 1789, in the seventieth year of his age, leaving a son, who inherited his abilities.

ROBERT DODSLEY.

THE subject of this short memoir claims our respect as a very remarkable example of genius, accompanied by the most valuable attributes of character, rising from the humblest walk in life, and finally attaining distinction and fortune, without exciting either envy in those who were left behind, or jealousy in those who were rivalled. He was born, in 1703, at Mansfield in Nottinghamshire, and received only such a limited education as his parents, who were in very poor circumstances, could afford. He commenced life as footman to the Honourable Mrs Lowther, and by his good conduct in that capacity, was as successful in obtaining the esteem of those around him, as he ever was afterwards, when he had moved into more im-

portant positions in society. Having employed his leisure time in cultivating his intellect, he began at an early age to write verses, which, being shown to his superiors, were deemed so creditable to his abilities, that he was encouraged to publish them in a volume, under the title of *The Muse in Livery*. This publication was dedicated to his mistress, and came forth under the patronage of a highly respectable list of subscribers. Such productions being then more rare than they have since become, it was regarded as a kind of wonder. Dodsley afterwards entered the service of Mr Dartmouth, a noted voluptuary, and one of the intimate friends of Pope; and having written a dramatic piece called *The Toyshop* (founded upon a play of the preceding century), it was shown by his new master to that distinguished poet, who was so well pleased with it, that he took the author under his protection, and made interest for the appearance of the play upon the stage.

The *Toyshop* was acted at Covent Garden in 1735, and met with the highest success. In a malignant epistle addressed about that time by Curll, the bookseller, to Pope, it is insinuated that this was owing to patronage alone. But nothing can seem more improbable than that Pope and his friends should be deceived as to the merit of this piece, or that they should interest themselves about a production glaringly destitute of merit. In reality, *The Toyshop* is a very clever adaptation from *The Muse's Looking-Glass* of Randolph, full of effective yet delicate satire, and supported by characters in the highest degree natural, and strikingly appropriate to the purpose of the piece.

The profits arising from this play, and the distinction which it obtained for the author, were such as would have induced many men in the circumstances of Dodsley to venture upon the precarious, but in many respects tempting life of a "town-writer," or author by profession. With the sober and modest author of *The Toyshop*, different considerations prevailed. Having resolved to enter upon some regular trade, he chose that of a bookseller, as the most appropriate to his taste, and that in which he might expect to turn the favour of his friends to the best account; and accordingly he opened a shop of that kind in Pall Mall. In this new situation, comparatively difficult as it may be supposed to have been, the same prudence and worth which had gained him esteem in his former condition, were not less strikingly exemplified. He was able to secure for himself and his establishment the countenance of many of the first literary persons of the day, including Pope, Chesterfield, Lyttleton, Shenstone, Johnson, and Glover, and also of many persons of rank who possessed a taste for letters;

and thus, in the course of a few years, he became one of the principal persons of his trade in the metropolis. Proceeding at the same time in his career as an author, he wrote a farce entitled *The King and the Miller of Mansfield*, founded on an old ballad of that name, and referring to scenes with which he had been familiar in early life. This was produced at Drury Lane in 1737, and was so highly successful, that he was induced to write a less fortunate sequel, under the title of *Sir John Cockle at Court*. The former continues to be occasionally represented. His next dramatic performance was a farce, founded on a ballad, entitled *The Blind Beggar of Bethnal Green*, which was not attended with much success. His only other composition of this kind was *Rex et Pontifex*, which he designed as a novelty in pantomime, but which was never produced on the stage. The general character of his comic plays was pleasing; they had not what would now be called much strength, but they excelled the most of the contemporary productions of their class in morality.

From an early period of life, Dodsley would seem to have had a taste for the almost forgotten drama of the reigns of Elizabeth and the two first Stuarts; a vast mine of poetical wealth, which the fastidious delicacy of later times had condemned to obscurity, on account of some peculiarities in a great measure external. In the present age, which is honourably distinguished by a revived relish of the beauties of the Elizabethan literature, the effort made by the subject of our memoir to resuscitate a portion of it, will meet with due appreciation. Animated by a spirit of adventure, uncommon in his own time, he published, in 1744, a *Collection of Plays by Old Authors*, in twelve volumes duodecimo, prefaced by a history of the stage, and illustrated by biographical and critical notes; the whole being dedicated to Sir C. C. Dormer, to whom Mr Dodsley acknowledges great obligations for the use of materials. The work was reprinted in 1780, by Mr Isaac Reed, and once more in 1825, on each occasion with some important improvements and necessary additions; but no one was more sensible, or could have more generously expressed his sense of the value of Mr Dodsley's labours, than the erudite antiquary just named. Another of the more valuable works projected by Dodsley was *The Preceptor*, first published in 1749, and designed to embrace what was then thought a complete course of education. It contained treatises on reading, elocution, and composition; on arithmetic, geometry, and architecture; on geography and astronomy; on chronology and history; on rhetoric and poetry; on drawing; on logic; on natural history; on ethics, or morality; on trade and commerce; on laws and government; and

on human life and manners; each being the composition of some person eminent in the branch of knowledge to which it referred. Dodsley's Preceptor attained a high popularity, and in the course of a few years went through numerous editions. We shall here advert to a few of the other works originated by him, or in which he acted as editor. A Collection of Poems by Eminent Hands, in six volumes, was commenced in 1752, and presented for the first time to the world a considerable number of the most admired poetical compositions of the age. In 1758, he commenced the publication of an Annual Register, which was the first work of that kind that appeared in England. Several of the earlier volumes were compiled by Burke, and the work has ever since been conducted with remarkable judgment, as well as success, notwithstanding the appearance of more than one rival. His Select Fables of Æsop and other Fabulists appeared in 1760, and was at once pronounced a work of classical elegance. The first book contained ancient, the second modern, and the third original fables, the last being chiefly the composition of the editor. A preliminary essay, also by him, was allowed to possess merit as a piece of criticism, being only challenged for one remark—namely, that the fox should not have been described in the fable as longing for grapes, because the appetite is not consistent with the known character of the animal. Mr Dodsley was not aware that foxes in the East are characterised by a ravenous fondness for grapes, inasmuch that the vines in Palestine, according to Dr Hasselquist, are often seriously injured by them. Solomon also says, in his Song ii. 15, "Take us the foxes, the little foxes that spoil the vines, for our vines have tender grapes."

The original works written by Dodsley during the same period were not numerous. In 1748, he produced a loyal masque on the occasion of the peace of Aix-la-Chapelle, and, two years afterwards, a small prose work, entitled *The Economy of Human Life*, in which the social duties are treated in a style intended to resemble that of the Scriptures and other Oriental writings. Though the literary and philosophical merits of the latter work are not great, it attained great popularity, and became extensively useful among young persons, for whose instruction it was more particularly designed. Like other successful books, it was followed by numerous slavish imitations, such as the *Economy of Female Life*, the *Economy of a Winter Day*, the *Second Part of the Economy of Human Life*, the *Economy of the Mind*, and many other *Economies*. One book of a poem on Public Virtue, and an Ode entitled *Melpomene*, next exercised his pen; and in 1758 he ventured to rise to tragedy, and composed *Cleone*, the fable of which he

derived from a French fiction. Though Garrick expressed a mean opinion of the play, and it was consequently taken to Covent Garden, it long drew full audiences, which was in part attributed to Mrs Bellamy's acting of the heroine. An attempt by Mrs Siddons to revive it did not succeed, owing, it is said, to the excess of pathos which it acquired from her unequalled performance in scenes of maternal distress. Dr Johnson admired Cleone so much as to say, that, if Otway had written it, no other of his pieces would have been remembered; which being reported to the author, he modestly said, "it was too much." A less prepossessed critic allows it to be considerably inferior to the plays of Otway and Southern, but to be equal to any of the tragedies of the latter half of the eighteenth century, excepting Home's Douglas.

A long and prosperous professional career enabled Mr Doddsley to retire from business, some years before his death, with a large fortune, which, however, made no alteration upon his modest and amiable character. His humble origin was neither a matter which he was anxious to conceal, nor a subject of vulgar boasting. He did not forget it, nor did he allow it to affect his deportment in a manner that could be disagreeable to others. Johnson mentions, that, on Dartinneuf the epicure being introduced into Lord Lyttleton's *Dialogues of the Dead*, and the conversation turning one day upon that subject, Doddsley remarked, "I knew him well, for I was once his footman;" an expression which seems to us to denote the most perfect exemption from the vice of affectation. Mindful, says one of his biographers, "of the early encouragement which his own talents met with, he was ever ready to give the same opportunity of advancement to those of others; and on many occasions he not only acted as publisher, but as patron, to men of genius. There was no circumstance by which he was more distinguished than by the grateful remembrance which he retained and always expressed towards the memory of those to whom he owed the obligation of being first taken notice of in life. Modest, sensible, and humane, he retained the virtues which first brought him into notice, after he had obtained wealth to satisfy every wish which could arise from the possession of it. He was a generous friend, and acquired the esteem and affection of all who were acquainted with him. It was his happiness to pass the greater part of his life in an intimacy with men of the brightest abilities, whose names will be revered by posterity; by most of whom he was loved as much for the virtues of his heart, as he was admired on account of his writings."

Mr Doddsley died of gout, at the house of his friend Mr

Spence, at Durham, September 5, 1764, in the sixty-first year of his age, and was interred in the Abbey Churchyard, where a handsome monument was erected to him. His miscellaneous poetry is usually printed in the collective editions of the British Poets, and his *Fables and Economy of Human Life* still continue to enjoy their early popularity. It is not, however, for his distinction in literature that he is here noticed, but for those amiable and respectable qualities of personal character which distinguished him alike in an humble and an elevated condition, and were mainly, we are inclined to believe, the causes of his rising from the one to the other. He will ever be esteemed as a remarkable example of genius springing up and advancing to usefulness amidst unfavourable circumstances, and of worth which in all circumstances was alike conspicuous and alike recognised. Nor is he perhaps less remarkable as an example of the union of genius and worth. In too many cases the former quality is found in connection with properties which disable and degrade it, but in Dodsley it consisted with the finest affections, the purest morality, and the most laudable prudence. Finally, his life is valuable as proving that the original rank of no man in this enlightened land, however humble, is calculated to affect him permanently in the consideration of those who have had opportunities of judging of his personal merit.

JOHN HOWARD.

JOHN HOWARD, an Englishman, who has justly obtained a celebrity over the whole civilised world for his extraordinary and unceasing efforts in the cause of suffering humanity, and for which he has been generally and justly entitled "the Benevolent Howard," was born about the year 1727, at Clapton, in the parish of Hackney, a large village immediately adjoining London. To this place his father seems to have removed from the pursuit of his business as an upholsterer, in Long Lane, Smithfield, where he had acquired a considerable fortune. The education of young Howard was extremely superficial; and when he left school, he was put as an apprentice to a wholesale grocer in the city; but this situation not being at all to his taste, he embraced the opportunity, on coming of age, of purchasing from his master the remainder of his time. By his father's will, he was not to come into the possession of his fortune until he reached his twenty-fourth year, and then

he became entitled to the sum of L.7000, in addition to the whole of his father's landed property, his plate, furniture, pictures, &c. Coming thus into the possession of a respectable patrimony, he was now at liberty to follow out the bent of his inclinations, which he did by setting out on his travels through France and Italy. On his return, being of delicate health, and inclined to consumption, he was put upon a rigorous regimen, which is said to have laid the foundation of that extraordinary abstemiousness and indifference to the gratification of his palate, which ever after so much distinguished him. In 1752, while twenty-five years of age, he married a lady in her fifty-second year; a step he took in consequence of having received from her many marks of kind attention during a sickness with which he was overtaken. The death of his wife in a few years put an end to this somewhat imprudent connexion. Soon after the death of his wife, he resolved upon leaving England on another tour, with a view to direct his mind from the melancholy reflections which that event had occasioned.

The country which Howard first intended to visit was Portugal, then rendered particularly interesting by the situation of its capital, still smoking in ruins from the effects of a tremendous earthquake. A great part of its capital, Lisbon, and thousands of its inhabitants, had been embowelled in the earth. It was to this sublime spectacle that Mr Howard's attention was principally directed; and he accordingly took his passage in a vessel, which, unfortunately, was captured by a French privateer. This event, unlucky in itself, gave a turn to the fate of the young philanthropist, and proved ultimately beneficial to mankind. His captors used him with great cruelty, for, after having been kept forty hours without food or water, he was carried into Brest, and confined, with the other prisoners, in the castle of that place. Here, after being cast with the crew and the rest of the passengers into a filthy dungeon, and there kept a considerable time without nourishment, a joint of mutton was at length thrown into the midst of them, and, for want of a knife, they were obliged to tear it in pieces, and gnaw it like dogs. In this dungeon he and his companions lay for six nights upon the floor, with nothing but straw. He was afterwards removed to Morlaix, and thence to Carpaix, where he was two months upon parole. He had no sooner obtained his own liberty, than he exerted all his influence to procure the liberation of some of his fellow-countrymen. Whilst at Carpaix, he obtained sufficient evidence of the English prisoners of war in France being treated with inhuman barbarity, and he did not rest till he influenced

the government in their behalf. It is to this event that Mr Howard himself refers the first excitement of that attention to those who were sick, and in prison, which afterwards occupied the greater part of sixteen years. Soon after his return to England, he formed a connexion with an amiable young lady, whom he married, and with her assistance he carried into effect various schemes of benevolence, for meliorating the condition of his tenantry and the poor in his neighbourhood. Of this valuable assistance he was, however, soon deprived, by the death of his wife, soon after she had given birth to a son. In 1769-70, Mr Howard paid a third and fourth visit to the Continent, and of which he has left various memoranda, written in a strain of unaffected Christian piety. In 1773, while in his retirement in England, he was created high sheriff of the county of Bedford. In this office he had numberless opportunities of inspecting the condition of the jails and bridewells under his jurisdiction, of remedying grievances, and alleviating the distresses of poor prisoners. The more and more that this benevolent man saw of the condition of the English prisons, he became the more anxious to pursue his investigations all over the country. He proceeded upon tours into the counties of Hertford, Berks, Wilts, Dorset, Hants, Sussex, Surrey, &c. The scenes of misery which now came under his notice were truly deplorable. At Salisbury, just without the prison gate, was a chain passed through a round staple fixed in the wall, at each end of which a debtor, padlocked by the leg, stood offering to those who passed by, nets, laces, purses, &c., made in the prison. At Winchester, Mr Howard saw a destructive dungeon for felons, eleven steps under ground, dark, damp, and close. In it the surgeon of the jail informed him that twenty prisoners had died of the jail fever in one year. One of the places which Mr Howard inspected in the course of his journey, was the bridewell of Surrey, at Guildford, in which he found neither bedding, straw, nor work. Soon after his return from making investigations into the condition of these abodes of vice and misery, he was examined before a committee of the House of Commons, touching the knowledge he had thus acquired; and, being called to the bar, the Speaker acquainted him that the house was very sensible of the humanity and zeal which had led him to visit the several jails of this kingdom, and conveyed to him the grateful thanks of the house and the country for his benevolent exertions in behalf of the most destitute and outcast members of the community.

Mr Howard continued, throughout the year 1773-74, to inspect the prisons and bridewells of England, and on one oc-

casian extended his tour of philanthropy into Scotland and Ireland. In 1775, he proceeded to the Continent for the purpose of examining the jails in France, Holland, and part of Flanders, Germany, and Switzerland, mostly all of which he found under better management than those in Great Britain. He was particularly pleased with the prisons of Holland, which presented a model which, except in a few points, he wished to have seen adopted in England, and every nation on the globe. He found a good deal to interest him in Germany. In the towns in that country, he frequently saw the doors of sandy rooms in the prisons marked, Ethiopia, India, Italy, France, England, &c.; on inquiring what such words meant, he was informed that in these rooms, parents, by the authority of the magistrates, confined their dissolute children, answering, in the meanwhile, to the inquiries which might be made after them, that they were gone to whatever country might be written upon the place of their confinement. This seems a strange and harsh arrangement, though we have no doubt many parents in this country would occasionally be glad to have the same ready means of incarcerating their dissolute children. In travelling, Mr Howard lived in the plainest manner; generally carrying along with his luggage a tea-kettle and other utensils, as well as the materials for making tea, of which he was fond, for its simple exhilarating qualities. At the inns, however, he generally ordered the best victuals and wines, so that there might be no complaint as to his stinginess; but these luxuries he seldom tasted. When he considered himself ill-treated by postilions, he punished them by withholding extra fees; but to show that he did not do so for the purpose of saving money, he sent his servant to gather the poor of the place, and, in the presence of the postilion, distributed among them the sum he would have paid. These traits of character becoming widely known, he in time was well known and carefully attended to wherever he travelled. On one occasion, he happened to visit a monastery at Prague, where he found the inmates feasting on a day which ought to have been devoted to abstinence. He was so much displeased with this breach of discipline, that he threatened to proceed to Rome to inform the Pope, and it was only after the monks had made the most humiliating apology, and expressed their contrition, that he promised to be silent on the subject to the head of their church. In 1781, he again departed from England on a tour of philanthropy, in order to proceed through Denmark, Sweden, Russia, and Poland, and some other countries in the north of Europe, and with the view of inspecting the prisons and hospitals on his route. Copenhagen, Stockholm, Petersburg, and Moscow,

were respectively visited, and in each he collected valuable information on the state of the common jails, and modes of punishment. Having thus visited every state of Europe, whence he could hope to derive assistance for the completion of the great design which animated him, except the two southern kingdoms of Spain and Portugal, he next directed his course thither, and on this journey visited the prisons of Madrid, Lisbon, and other populous towns. This tour being completed, he returned to England, and finished his fourth general inspection of the English jails, preparatory to the publication of a second edition of his Appendix to the State of Prisons, a work he had some time before given to the public. When these journeys were finished, he summed up the number of miles which, in less than ten years, he had travelled in his own country, and abroad, on the reform of prisons, bridewells, and hospitals, and found that they formed a total of 42,033. When, in the spring of 1784, Mr Howard had laid before the public the result of his minute inspection of the prisons, and many of the hospitals of his own country, and of the principal states of Europe, he retired to his estate at Cardington, in whose calm seclusion he purposed to spend the remaining years of his existence. The benevolent Howard had now nothing to embitter his peace but the conduct of his son, who, having been sent to the University of Edinburgh, and placed under the care of the venerable Dr Blacklock, unhappily contracted habits of dissipation and extravagance, which were his own ruin, and well nigh broke his father's heart.

After having devoted more than eleven years of his valuable existence to the reformation of the jails, and the improvement of the hospitals of his own country, as well as those of foreign states, he determined again to quit his home on a journey of benevolence, more important to the interests of the human race, though fraught with greater danger to himself, than any he had yet undertaken. His plan was indeed the most humane and beneficent that ever entered into the mind of man, for it was to check the progress of devouring pestilence, by inspecting the condition of the principal lazarettos in Europe, and, if possible, throwing a light on that most dreadful of all scourges of mankind—the plague. On this tour of mercy, he visited the Italian states, and from thence passed by sea to Turkey, in which country he examined the hospitals and prisons of Constantinople, Smyrna, and other places. While on this expedition, he “succeeded” in getting on board a vessel with a foul bill of health; and while in it at sea, the vessel was attacked by a Moorish privateer; in the engagement which took place, he fought with great bravery, and aided in repel-

King the attack of the barbarians. When, along with the crew, he arrived in Venice, he submitted to go through the most shocking privations in a loathsome lazaretto, in order to acquire knowledge of the management of those supposed to be labouring under plague. On all these trials his good spirits never forsook him. Being liberated in due course of time, he returned to England, and resumed his inspection of the town and county jails and bridewells. It is mentioned that he frequently exercised his liberality in relieving poor debtors from confinement, by paying their debts. "I have often seen him come to his lodgings," says the journal of his attendant in most of his tours, "in such spirits and joy, when he would say to me, 'I have made a poor woman happy; I have sent her husband home to her and her children.'" He was exceedingly methodical in spending his time. He generally declined every invitation to dinner or to supper whilst on his tours; abstained from visiting every object of curiosity, however attractive, and even from looking into a newspaper, lest his attention should be diverted from the grand purpose in which he was engaged.

In 1789-90, Mr Howard again proceeded on a journey, which was the seventh and last, to the Continent, to re-examine the prisons and hospitals of Holland, part of Germany, Prussia, and Russia. His plan was to have spent three years abroad. One object of his pursuit, and perhaps the principal one, was to obtain further information respecting the plague, by extending his visits to those parts of the world in which it rages with the greatest virulence, and on some of whose infectious coasts it is supposed to take its rise. As soon as he had resolved to undertake this hazardous journey, he became impressed with the belief that it would be his last; and when he took leave of one and another of his friends, he did it as one whose face they would see no more on this side the grave. These feelings were sadly verified. The benevolent Howard penetrated in his journey into the deserts of Tartary, to the confines of the Euxine Sea, every where examining the prisons and hospitals, and doing all in his power to alleviate the sufferings of the inmates. At Cherson, in the distant region of Russian Tartary, his visits to the infectious hospitals brought upon him the attacks of a severe fever, a species of plague, under which his constitution gave way. Every attention was paid to him by the authorities, but nothing could save his life, which he gave up with pious resignation and hope, on the morning of the 20th January 1790.

Thus died one of the brightest ornaments of English biography; a person whose name is associated with all that is virtuous and benevolent, and who will be remembered with

feelings of admiration and respect for numberless ages, in every part of the civilised world.

JOHN FREDERICK OBERLIN.

THE individual whose entertaining and most instructive life we are about to introduce to the notice of the reader, is a remarkable exemplification of the extent of good which an actively benevolent person may sometimes perform, in a particular locality, under the most disadvantageous circumstances.

Oberlin was a native of Strasbourg, and, after being educated as a Lutheran clergyman, was appointed in 1767, when twenty-seven years of age, to the cure of Waldbach, in the Ban de la Roche, a high and sterile valley in Alsace. His mind was animated with the most ardent desire of usefulness, not only in his profession, but in many other respects; and greatly did his parish need the attentions of such a philanthropist. The whole valley afforded subsistence, and that of the most wretched kind, for only about a hundred families, who were a race of rude and ignorant rustics, cut off by their peculiar dialect, as well as by the inaccessibility of their situation, from all the rest of mankind. The husbandmen* were destitute of the commonest implements, and had no means of procuring them; they had no knowledge of agriculture beyond the routine practices of their forefathers; they were ground down and irritated by a hateful feudal service. He devoted himself to the correction of these evils, at the same time that he laboured in his spiritual vocation. The people at first did not comprehend his plans or appreciate his motives. Ignorance is always suspicious. They resolved, with the dogged pertinacity with which the uneducated of all ranks cling to the rubbish of old customs, not to submit to innovation. The peasants agreed on one occasion to waylay and beat him, and on another to duck him in a cistern. He boldly confronted them, and subdued their hearts by his courageous mildness. But he did more; he gave up *exhorting* the people to pursue their real interests; he practically showed them the vast benefits which competent knowledge and well-directed industry would procure for them.

* We are indebted for the matter which follows to a work to which we have to acknowledge other obligations, the excellent Journal of Education published by the Society for the Diffusion of Useful Knowledge.

These mountaineers in many respects were barbarians ; and he resolved to civilise them, as all savages are civilised, by bringing them into contact with more enlightened communities. The Ban de la Roche had no roads. The few passes in the mountains were constantly broken up by the torrents, or obstructed by the loosened earth which fell from the overhanging rocks. The river Bruche, which flows through the canton, had no bridge but one of stepping-stones. Within a few miles of this isolated district was Strasbourg, abounding in wealth and knowledge, and all the refinements of civilisation. He determined to open a regular communication between the Ban de la Roche and that city ; to find there a market for the produce of his own district, and to bring thence in exchange new comforts and new means of improvement. He assembled the people, explained his objects, and proposed that they should blast the rocks to make a wall, a mile and a half in length, to support a road by the side of the river, over which a bridge must also be made. The peasants one and all declared the thing was impossible ; and every one excused himself from engaging in such an unreasonable scheme. Oberlin exhorted them, reasoned with them, appealed to them as husbands and fathers—but in vain. He at last threw a pickaxe upon his shoulder, and went to work himself, assisted by a trusty servant. He had soon the support of fellow-labourers. He regarded not the thorns by which his hands were torn, nor the loose stones which fell from the rocks and bruised them. His heart was in the work, and no difficulty could stop him. He devoted his own little property to the undertaking ; he raised subscriptions amongst his old friends ; tools were bought for all who were willing to use them. On the Sunday the good pastor laboured in his calling as a teacher of sacred truths ; but on the Monday he rose with the sun to his work of practical benevolence, and, marching at the head of two hundred of his flock, went with renewed vigour to his conquest over the natural obstacles to the civilisation of the district. In three years the road was finished, the bridge was built, and the communication with Strasbourg was established. The ordinary results of intercourse between a poor and a wealthy, a rude and an intelligent community, were soon felt. The people of the Ban de la Roche obtained tools, and Oberlin taught their young men the necessity of learning other trades besides that of cultivating the earth. He apprenticed the boys to carpenters, masons, glaziers, blacksmiths, and cartwrights, at Strasbourg. In a few years these arts, which were wholly unknown to the district, began to flourish. The tools were kept in good order, wheel-carriages became common, the wretched cabins were

converted into snug cottages ; the people felt the value of these great changes, and they began to regard their pastor with unbounded reverence.

Oberlin, however, had still some prejudices to encounter in carrying forward the education of this rude population. He desired to teach them better modes of cultivating their sterile soil ; but they would not listen to him. "What," said they, with the common prejudice of all agricultural people in secluded districts, "what could he know of crops, who had been bred in a town?" It was useless to reason with them ; he instructed them by example. He had two large gardens near his parsonage, crossed by footpaths. The soil was exceedingly poor ; but he trenched and manured the ground with a thorough knowledge of what he was about, and planted it with fruit trees. The trees flourished, to the great astonishment of the peasants ; and they at length entreated their pastor to tell them his secret. He explained his system, and gave them slips out of his nursery. Planting and grafting soon became the taste of the district, and in a few years the bare and desolate cottages were surrounded by smiling orchards. The potatoes of the canton, the chief food of the people, had so degenerated, that the fields yielded the most scanty produce. The peasants maintained that the ground was in fault ; Oberlin, on the contrary, procured new seed. The soil of the mountains was really peculiarly favourable to the cultivation of this root, and the good minister's crop of course succeeded. The force of example was again felt, and abundance of potatoes soon returned to the canton. In like manner, Oberlin introduced the culture of Dutch clover and flax, and at length overcame the most obstinate prejudice, in converting unprofitable pastures into arable land. Like all agricultural improvers, he taught the people the value of manure, and the best modes of reducing every substance into useful compost. The maxim which he incessantly repeated was, "let nothing be lost." He established an agricultural society, and founded prizes for the most skilful farmers. In ten years from his acceptance of the pastoral office in the Ban de la Roche, he had opened communications between each of the five parishes of the canton and with Strasbourg, introduced some of the most useful arts into a district where they had been utterly neglected, and raised the agriculture of these poor mountaineers from a barbarous tradition into a practical science. Such were some of the effects of education in the most comprehensive sense of the word.

The instruction which Oberlin afforded to the adults of his canton was only just as much as was necessary to remove the most pressing evils of their outward condition, and to impress

them with a deep sense of religious obligation. But his education of the young had a wider range. When he entered on his ministry, the hut which his predecessor had built was the only schoolhouse of the five villages composing the canton. It had been constructed of unseasoned logs, and was soon in a ruinous condition. The people, however, would not hear of a new building; the loghouse had answered very well, and was good enough for their time. Oberlin was not to be so deterred from the pursuit of his benevolent wishes. He applied to his friends at Strasbourg, and took upon himself a heavy pecuniary responsibility. A new building was soon completed at Waldbach, and in a few years the inhabitants in the other four parishes came voluntarily forward, to build a schoolhouse in each of the villages. Oberlin engaged zealously in the preparation of masters for these establishments, which were to receive all the children of the district when of a proper age. But he also carried the principle of education farther than it had ever before gone in any country. He was the founder of Infant Schools. He saw that, almost from the cradle, children were capable of instruction; that evil habits began much earlier than the world had been accustomed to believe; and that the facility with which mature education might be conducted, greatly depended upon the impressions which the reason and the imagination of infants might receive. He appointed *conductrices* in each commune, paid at his own expense; and established rooms, where children from two to six years old might be instructed and amused: and he thus gave the model of those beautiful institutions which have first shown us how the happiness of a child may be associated with its improvement, and how knowledge, and the discipline which leads to knowledge, are not necessarily

“Harsh and crabbed as dull fools suppose.”

The children in these little establishments were not kept “from morn till noon, from noon till dewy eve,” over the horn-book and primer. They learnt to knit, and sew, and spin; and when they were weary, they had pictures to look at, and maps, engraved on wood, for their special use, of their own canton, of Alsace, of France, and of Europe. They sang songs and hymns; and they were never suffered to speak a word of *patois*. This last regulation shows the practical wisdom of their instructor. There are parts of the United Kingdom which will always fall short of the general civilisation, as long as languages which have no literature continue to be spoken there. The Welsh, and Irish, and Gaelic, however venerable in the eyes of antiquaries, are effectual obstacles to the civilisation of the districts from which they are not yet rooted out.

When the children of the Ban de la Roche—the children of peasants, be it remembered, who a few years before the blessing of such a pastor as Oberlin was bestowed upon them, were not only steeped to the lips in poverty, but were groping in that darkness of the understanding which too often accompanies extreme indigence—when these children were removed to the higher schools, which possessed the most limited funds when compared with almost the meanest of our parochial endowments for education, they were taught reading, writing, arithmetic, geography, astronomy, sacred and profane history, agriculture, natural history especially botany, natural philosophy, music, and drawing. Oberlin reserved for himself, almost exclusively, the religious instruction of this large family; and he established a weekly meeting of all the scholars at Waldbach. The inhabitants of Strasbourg and of the neighbouring towns from which the Ban de la Roche had been recently cut off, came to look upon the wonders which one man had effected. Subscriptions poured in upon the disinterested pastor; endowments were added. Well did he use this assistance. He founded a valuable library for the use of the children; he printed a number of the best schoolbooks for their particular instruction; he made a collection of philosophical and mathematical instruments; and established prizes for masters and scholars.

Thus did this extraordinary man strive to raise the intellectual standard of his parishioners, whilst he laboured to preserve the purity of their morals and the strength of their piety. Never did religion present more attractive features than in the secluded districts of the Ban de la Roche. The love of God was constantly inculcated as a rule of life; but the principle was enforced with no ascetic desire to separate it from the usefulness and the enjoyment of existence. The studies in which these poor children were trained, contributed as much to their happiness as to their knowledge. They were not confined for years, as are the boys and girls of our parish schools, to copying large text and small hand, to learning by rote the one spelling-book, to hammering at the four rules of arithmetic without understanding their principles or their more practical applications, and to repeating the Catechism. The principle which unhappily determines the course of too many of our parochial schools, is a fear that the children of the working classes should be over-educated—a grovelling and ignorant fear. The children of Oberlin's schools were taught whatever could be useful to them in their pastoral and agricultural life, and whatever could enable them to extract happiness out of their ordinary pursuits. They were incited to compose short essays on the

management of the farm and the orchard ; they were led into the woods to search for indigenous plants, to acquire their names, and to cultivate them in their own little gardens ; they were instructed in the delightful art of copying these flowers from nature ; it was impressed upon their minds, that as they lived in a district separated by mountains from the rest of mankind, and moreover a district naturally sterile, it was their peculiar duty to contribute something towards the general prosperity ; and thus, previously to receiving religious confirmation, Oberlin required a certificate that the young person had planted two trees. Trees were to be planted, roads were to be put into good condition, and ornamented, to please Him "who rejoices when we labour for the public good." Surely a community thus trained to acquire substantial knowledge, equally conducive to individual happiness and general utility, were likely to become virtuous and orderly members of society, contented in their stations, respectful to their superiors, kind to each other, hospitable to the stranger, tolerant to those who differed from them in opinion. Oberlin lived long enough to see that such conduct was the real result of his wise and benevolent system.

In 1784, Oberlin lost his excellent wife. There was a servant in his family, an orphan named Louisa Schepler, who had been brought up in his schools, and was afterwards one of the *conductrices* of the infant establishments. After being the nurse of Oberlin's children for nine years following the death of their mother, this poor girl wrote to her master, to beg that she might be allowed to serve him without wages.

"Do not, I entreat you," she says, "give me any more wages ; for as you treat me like your child in every other respect, I earnestly wish you to do so in this particular also. Little is needful for the support of my body. My shoes, and stockings, and *sabots*, will cost something ; but when I want them, I can ask you for them, as a child applies to its father."

In the course of twenty years, the population of the Ban de la Roche had increased to six times the number that Oberlin found them when he entered upon his charge. The knowledge which their pastor gave to the people, gave them also the means of living, and the increase of their means increased their numbers. The good minister found employment for all. In addition to their agricultural pursuits, he taught the people straw-plaiting, knitting, and dyeing with the plants of the country. In the course of years, Mr Legrand, of Basle, a wealthy and philanthropic manufacturer, who had been a director of the Helvetic republic, introduced the weaving of silk ribands into the district.

The people of the Ban de la Roche for eighty years had been in dispute with the *seigneurs* about the rights of forest to which each party laid claim. This dispute was carried on, sometimes with furious violence, but habitually with expensive litigation. In 1813, Oberlin persuaded his flock to come to an accommodation, which should at the same time have respect to the claims of the owners, and secure a due portion of their own proper privileges. He convinced them that this ruinous contest was the scourge of the country, and that it was the duty of all men to live in peace. The parties agreed to an accommodation advantageous to both sides; and the pen with which the deed of pacification was signed, was solemnly presented to him by the mayors of the canton. It was for that pen to record, as clearly as facts can speak, that an educated people are the truest respecters of the rights of property! Without an acquaintance with their political duties (that part of education which is the most fearfully neglected amongst ourselves), Oberlin could never have convinced those peasants that any portion of the claims of the *seigneurs* were founded in justice and the common good.

Oberlin died so lately as the year 1827, when he had attained a very great age. The difficulties which he surmounted, and the actual good which he did, should be a lesson of encouragement to all individuals who may be situated with the means of producing some local improvement within their reach. He no doubt forfeited some property, and neglected some good prospects, for the sake of his humble flock; but he had a reward amply compensating these acts of supposed self-denial. In the fulness of his heart, the venerable man, looking round upon the vallies which he had filled with the peacefulness of contented industry, and upon the people whom he had trained to knowledge, and to virtue, the best fruit of knowledge, exclaimed, "Yes! I am happy!" And when he died, he was followed to the grave by an entire population, upon whom he, a poor but industrious and benevolent clergyman, had showered innumerable blessings, the least of which the idle and self-indulging lord of thousands has neither the grace to will nor the spirit to bestow.

SIR WILLIAM FORBES.

THE life of this eminent banker and citizen does not by any means form a biography abounding in stirring and important events, such as are frequently found in the memoirs of distinguished individuals well known to fame; it however furnishes an exceedingly pleasing narrative of the efforts of genius and virtue as displayed in connection with comparatively exalted rank, and affords an admirable study for those who esteem themselves gentlemen by birth, yet who, from mistaken notions of honour, submit to live a life of idleness, misery, and poverty, rather than exert themselves in occupations suitable to their abilities. We quote in an abridged form from the Scottish Biographical Dictionary, by Robert Chambers.

Sir William Forbes was born at Edinburgh in the year 1739, and was descended by the father's side from a branch of the ancient family of Forbes of Monymusk, the proprietors, at the close of the seventeenth century, of the barony of that name in Aberdeenshire; and by his paternal grandmother, from the still older and more dignified family of the Lords Pitsligo, in the same county (attainted in 1745, from the then Lord Pitsligo engaging in the rebellion of that year). His mother belonged also to the family of Monymusk, and through her he acquired the baronetcy from which he derived his title. His father was bred to the Scottish bar, but died while Sir William was only four years of age, leaving his mother, with two infant sons, and very slender means of support. The younger of these children having died while in youth, the hopes of the widow were centred in her remaining child, the subject of the present memoir.

Lady Forbes having gone to reside at Aberdeen, here Sir William had the benefit of an excellent education, as well as the superintendence of his respectable guardians, among whom were Lord Forbes and his relation Lord Pitsligo; by them he was habituated to ideas of good society, and had the foundation laid of that highly honourable and gentlemanlike character which so remarkably distinguished him in after-life. But it was chiefly to the maternal guardianship of Lady Forbes that he owed the formation of his character. It has been observed, that the source of every thing which is pure and upright in subsequent years, is to be found in the lessons of virtue and piety instilled into the infant mind by maternal love; and of this truth the character of Sir William Forbes affords a striking example. He has been heard to declare that he owed every

thing to the upright and sedulous care of his mother. She belonged to a class formerly well known, but unhappily nearly, if not altogether, extinct in this country, who, though descended from ancient and honourable families, and intimate with the best society, lived in privacy, and what would now be deemed poverty, solely engaged in the care of their children, and the correct discharge of their social duties.

It is delightful to trace the history of Sir William at this early period of his career, and to peruse the account of his mother's arrangements in his behalf. His education being completed, he removed with Lady Forbes to Edinburgh in 1753, being then in the fourteenth year of his age, and ready to enter upon a profession. By the friendly interference of Mr Farquharson of Haughton, Messrs Coutts, bankers, were induced to receive him as an apprentice into their highly respectable establishment. The mother and son did not in the first instance keep house for themselves, but boarded with a widow lady; and it is worthy of remark, as a proof of the difference in the style of living, and the value of money between that time and the present, that the sum paid for the board of the two was only at the rate of forty pounds a-year. At Whitsunday 1754, as Sir William was bound an apprentice to the banking-house, his mother removed to a small house, consisting of only a single floor, in Forrester's Wynd, a narrow steep alley diverging from the High Street to the Cowgate, opposite the old prison of Edinburgh, and many years since cleared away to make room for the Advocates' Library buildings. Miserable as the accommodations in Forrester's Wynd would be reckoned in the present day, they were, at the period we refer to, on a par with those enjoyed by many of the most respectable classes of the community. Humble as the premises of Lady Forbes were, and slender as were her resources, this exemplary woman ever preserved a dignified independence, and properly supported her status in society. She was visited by persons of the very first distinction in Scotland, and frequently entertained them at tea-parties in the evening—a mode of seeing society, which, although almost gone into disuse with the increasing wealth and luxury of modern manners, was then very prevalent in the capital of Scotland, and where incomparably better conversation prevailed, than in the heavy dinner parties which have succeeded.

It was an early impression of Sir William's, that one of his principal duties in life should consist in restoring his ancient but now dilapidated family fortunes; and it was under this feeling that he engaged in the mercantile profession. In pursuance of this honourable motive, he assiduously applied to

the business which he had embraced. His apprenticeship lasted seven years, during which he continued to live with his mother in the same frugal and retired manner, but in the enjoyment of the same excellent society which they had embraced on first coming to Edinburgh. After its expiry, he acted for two years as clerk in the establishment, during which time his increasing emoluments enabled him to make a considerable addition to the comforts of his mother, whose happiness was ever the chief object of his care. In 1761, his excellent abilities and application to business induced the Messrs Coutts to admit him as a partner, with a small share in the banking-house, and he ever after ascribed his good fortune in life to the fortunate connection thus formed with that great mercantile family. But without being insensible to the benefits arising from such a connection, it is perhaps more just to ascribe it to his own undeviating purity and integrity of character, which enabled him to turn to the best advantage those fortunate incidents which at one time or other occur to all in life, but which so many suffer to escape from negligence, instability, or a mistaken exercise of their talents.

In 1763, one of the Messrs Coutts died, another retired from business through ill health, and the two others were settled in London. A new company was therefore formed, consisting of Sir William Forbes, Sir James Hunter Blair, and Sir Robert Herries; and although none of the Messrs Coutts retained any connection with the firm, their name was retained out of respect to the eminent gentlemen of that name who had preceded them. The business was carried on on this footing till 1773, when the name of the firm was changed to that of Forbes, Hunter, and Co. Of the new firm, Sir William Forbes continued to be the head from that time till the period of his death; and to his sound judgment and practical sagacity in business, much of its subsequent prosperity was owing.

In 1770, he married Miss Elizabeth Hay, eldest daughter of Dr (afterwards Sir James) Hay; a union productive of unbroken happiness to his future life, and from which many of the most fortunate acquisitions of partners to the firm have arisen. This event obliged him to separate from his mother, the old and venerated guide of his infant years, as her habits of privacy and retirement were inconsistent with the more extended circle of society in which he was now to engage. She continued from that period to live alone. Her remaining life was one of unbroken tranquillity and retirement. Blessed with a serene and contented disposition, enjoying the kindness, and gratified by the rising prosperity and high character which her son had obtained, and fortunate in seeing the fortunes of

her own and her husband's family rapidly reviving under his successful exertions, she lived happy and contented to an extreme old age, calmly awaiting the approach of death, to which she neither looked forward with desire nor apprehension. After a life of unblemished virtue and ceaseless duty, she expired on the 26th December 1789.

The benevolence of Sir William Forbes's character, his unwearied charity and activity of disposition, naturally led to his taking a very prominent share in the numerous public charities of Edinburgh. In plans for the better management of the Charity Work-House, the Orphan Hospital, and the erection of the High School, he was actively engaged. He was also an active promoter of the Society of Scottish Antiquaries, the institution of Trustees for the Encouragement of Manufactures and Fisheries, and the establishment of the present Lunatic Asylum. He was also one of the most zealous of those who promoted and carried to a happy conclusion the erection of the South Bridge; one of the most useful and successful of the improvements of Edinburgh. Sir William was a warm adherent of the Scottish Episcopal church, to promote the benefit of which he was unwearied in his exertions. Chiefly by his own efforts, and those of his son, the late Sir William, the Episcopal communion of Edinburgh was raised from the most obscure situations in the old town, and placed in two beautiful edifices, raised at an expense of above L.30,000. Taking the principal lead in connection with this communion, he was mainly instrumental in bringing to Edinburgh the Rev. Mr Alison, the well-known author of the *Essay on Taste*, from a remote rectory in Shropshire.

Sir William's success in trade enabled him, about the year 1781, to acquire the estate of Pitsligo, by purchase, and thus he realised his early and favourite wish of restoring to his ancient family their paternal inheritance. A new field was now opened for his active benevolence of disposition. He commenced improvements on a liberal scale; laid out the village of New Pitsligo, and gave every assistance to the farmers. Numbers of poor cottars were established by his care on the most uncultivated parts of the estate, most of whom not only paid no rent for the land they occupied, but were pensioners on his bounty—a mode of proceeding which, although it brought only burdens on the estate at first, has since been productive of the greatest benefit, by the continual application of that greatest of all improvements to a barren soil, the labour of the human hand. In order to encourage industry on his estate, he established a spinning-school at New Pitsligo, introduced the linen manufacture, and erected a bleachfield—

undertakings which have since been attended with the greatest success. At the same time, to promote the education of the young, he built a schoolhouse, where the Society for the Propagation of Christian Knowledge established a teacher; and in order to afford to persons of all persuasions the means of attending that species of worship to which they were inclined, he built and endowed not only a chapel of ease, with a manse for the minister, connected with the established church, but a chapel, with a dwelling-house for an Episcopal clergyman, for the benefit of those who belonged to that persuasion—admirable acts of beneficence, hardly credible in one who resided above two hundred miles from this scene of his bounty, and was incessantly occupied in projects of improvements or charity in his own city.

To most men it would appear that this support and attention to these multifarious objects of benevolence, both in Edinburgh and on his Aberdeenshire estates, would have absorbed the whole of both his fortune and his time, which could be devoted to objects of beneficence. But that was not Sir William Forbes's character. Indefatigable in activity, unwearied in doing good, he was not less strenuous in private than in public charity; and no human eye will ever know, no human ear ever learn, the extensive and invaluable deeds of kindness and benevolence which he performed, not merely to all the unfortunate who fell within his own observation, but all who were led by his character for beneficence to apply to him for relief. Perhaps no person ever combined to so great a degree the most unbounded pecuniary generosity with delicacy in the bestowal of the gift, and discrimination in the mode in which it was applied. Without giving way to the weakness of indiscriminately relieving all who apply for charity, which so soon surrounds those who indulge in it with a mass of idle or profligate indigence, he made it a rule to inquire personally, or by means of those he could trust, into the character and circumstances of those who were partakers of his bounty; and when he found that it was really deserved, that virtue had been reduced by suffering, or industry blasted by misfortune, he put no bounds to the splendid extent of his benefactions. To one class in particular, in whom the sufferings of poverty are perhaps more severely felt than by any other in society, the remnants of old and respectable families, who had survived their relations, or been broken down by misfortune, his charity was in a most signal manner exerted; and numerous aged and respectable individuals, who had once known better days, would have been reduced by his death to absolute ruin, if they had not been fortunate enough to find in his descend-

ants, the heirs not only of his fortune, but of his virtue and generosity.

Hitherto Sir William Forbes's character has been considered merely as that of a public-spirited, active, and benevolent gentleman, who, by great activity and spotless integrity, had been eminently prosperous in life, and devoted, in the true spirit of Christian charity, a large portion of his ample means and valuable time to the relief of his fellow-creatures, or works of public utility and improvement. But this was not his only character: he was also a gentleman of the highest breeding and most dignified manners; the life of every scene of innocent amusement or recreation; the head of the most cultivated and elegant society in the capital; and a link between the old Scottish aristocratical families, to which he belonged by birth, and the rising commercial opulence with which he was connected by profession, as well as the literary circle, with which he was intimate from his acquirements.

In 1768, he spent nearly a twelvemonth in London, in Sir Robert, then Mr Herries's family; and such was the opinion formed of his abilities even at that early period, that Sir Robert anxiously wished him to settle in the metropolis in business; but though strongly tempted to embrace this offer, from the opening which it would afford to London society, of which he was extremely fond, he had sufficient good sense to withstand the temptation, and prefer the more limited sphere of his own country as the scene of his future usefulness. But his residence in London at that time had a very important effect upon his future life, by introducing him to the brilliant, literary, and accomplished society of that capital, then abounding in the greatest men who adorned the last century; Dr Johnson, Mr Burke, Sir Joshua Reynolds, Mr Gibbon, Mr Arbuthnot, and a great many others. He repeatedly visited London for months together at different times during the remainder of his life, and was nearly as well known in its best circles as he was in that of his own country. At a very early period of his life he had conceived the highest relish for the conversation of literary men, and he never afterwards omitted an occasion of cultivating those whom chance threw in his way; the result of which was, that he gradually formed an acquaintance, and kept up a correspondence, with all the first literary and philosophical characters of his day. His tastes in this respect probably suggested to him the idea of writing the life of Dr Beattie, the author of the *Minstrel*, and one of his earliest and most valuable friends. He executed this work accordingly, which appeared in 1805, shortly before his death, and in such a way as to give the most favourable impression of the distinction which he would have attained as an author,

had his path in general not lain in a more extended and peculiar sphere of usefulness.

Besides his other admirable qualities, Sir William was accomplished in no ordinary degree. He was a good draughtsman; was well acquainted with music, and by his efforts contributed much to form the concerts which in his day were so prominent a feature of the Edinburgh society. His conversational powers were considerable, and his store of anecdotes very extensive. He likewise supported, to the utmost of his power, every project for the amusement and gratification of the young, in whose society he always took the greatest pleasure. He was not less remarkable for his unambitious views. He was frequently offered a seat in Parliament, both for the city of Edinburgh and the county of Aberdeen; but he uniformly declined the offer. In 1799, he was offered an elevation to the peerage, by which the family title of Pitsligo might have been restored; but this honour he likewise respectfully declined, with the concurrence of his eldest son, deeming the acceptance of a baronial title inconsistent with the mercantile establishment with which his fortunes were bound up.

No man ever more successfully or conscientiously conducted the important banking concern entrusted to his care. The large sums deposited in his hands, and the boundless confidence universally felt in the solvency of the establishment, gave him very great facilities, if he had chosen to make use of them, for the most tempting and profitable speculations. But he uniformly declined having any concern in such transactions; regarding the fortunes of others entrusted to his care as a sacred deposit, to be administered with more scrupulous care and attention than his private affairs. The consequence was, that though he perhaps missed some opportunities of making a great fortune, yet he raised the reputation of the house to the highest degree for prudence and able management, and thus laid the foundation of that eminent character which it has ever since so deservedly enjoyed.

But the end of a life of so much dignity and usefulness, the pattern of Christian grace and refined courtesy, at length approached. In 1802, Sir William had the misfortune to lose Lady Forbes, the loved and worthy pattern of his virtues, which sensibly affected his spirits. In May 1806, he began to feel symptoms of shortness of breath, and his sufferings for many months were very severe. At last, amidst the tears of his relations, and the blessings of his country, death closed his useful career, on the 12th of November 1806. Besides the son who succeeded him in his title, Sir William left other two sons, namely, Lord Medwyn (a senator of the College of Justice), Mr George Forbes, and several daughters, all of whom

succeeded to the unwearied activity and benevolence of their father's character.

DR ALEXANDER MURRAY.

THIS eminent linguist and scholar, who, from the lowly condition of a shepherd boy, raised himself to the situation of Professor of Oriental Languages in the University of Edinburgh, was born on the 22d of October 1775, at a place called Dunkitterick, in Galloway, in the south of Scotland, where his father followed the profession of a shepherd, and reared a large family in humble comfort and respectability. The following is a condensation of the narrative which Murray has written of himself, and which appeared in the *Literary History of Galloway* :—

“Some time in autumn 1781, my father bought a catechism for me, and began to teach me the alphabet. As it was too good a book for me to handle at all times, it was generally locked up, and he throughout the winter drew the figures of the letters to me in his *written* hand, on the board of an old wool-card, with the black end of an extinguished heather stem or root snatched from the fire. I soon learned all the alphabet in this form, and became writer as well as reader. I wrote with the board and brand continually. Then the catechism was presented, and in a month or two I could read the easier parts of it. I daily amused myself with copying, as above, the *printed* letters. In May 1782, he gave me a small psalm-book, for which I totally abandoned the catechism, which I did not like, and which I tore into two pieces, and concealed in a hole of a dike. I soon got many psalms by memory, and longed for a new book. Here difficulties arose. The Bible, used every night in the family, I was not permitted to open or touch. The rest of the books were put up in chests. I at length got a New Testament, and read the historical parts with great curiosity and ardour. But I longed to read the Bible, which seemed to me a much more pleasant book, and I actually went to where I knew an old loose-leaved Bible lay, and carried it away piecemeal. I perfectly remember the strange pleasure I felt in reading the history of Abraham and of David. I liked mournful narratives, and greatly admired Jeremiah, Ezekiel, and the Lamentations. I pored on these pieces of the Bible in secret for many months, for I durst not show them openly ; and as I read constantly, and remem-

bered well, I soon astonished all our honest neighbours with the large passages of Scripture I repeated before them. I have forgot too much of my biblical knowledge; but I can still rehearse all the names of the patriarchs from Adam to Christ, and various other narratives seldom committed to memory.

My father's whole property was only two or three scores of sheep, and four muirland cows, his reward for herding the farm of Kitterick for Mr Alexander Laidlaw in Clatteran-shaws, on the other side of the Dee. He had no debts, and no money. We lived in a wild glen, five or six miles from Minigaff, and more from New Galloway. All his sons had been bred shepherds; he meant to employ me in that line; and he often blamed me for laziness and uselessness, because I was a bad and negligent herd-boy. The fact was, I was always a weakly child, not unhealthy, but not stout. I was short-sighted, a defect he did not know, and which was often the occasion of blunders when I was sent to look for cattle. I was sedentary, indolent, and given to books, and writing on boards with coals. In 1783, my fame for wondrous reading, and a great memory, was the discourse of the whole glen. But my father could not pay the expenses of lodging and wages for me at any school. In harvest 1783, William Cochrane, a brother of my mother, returned from England, where he had made a few hundred pounds as a travelling merchant. He came to visit our family, and being informed of my genius, as they called it, undertook to place me next spring at New Galloway school, and to lodge me in the house of Alexander Cochrane, my grandfather, then alive, and dwelling about a mile from New Galloway. This simple expedient might have occurred to my parents, but I never heard them propose it; the idea of school wages frightened them from employing it. I was brought to New Galloway about the 26th of May 1784, and for a month made a very awkward figure in the school, then taught by Mr William Gordon: he read English well, and had many scholars. Mr Gillespie, who is almost my equal in years, being born in 1775 or 1776, was then reading the rudiments of Latin. My pronunciation of words was laughed at, and my whole speech was a subject of fun. But I soon gained impudence; and before the vacation in August, I often stood dux of the Bible class. I was in the meantime taught to write copies, and use paper and ink.

In spring 1785, I was put to assist as a shepherd boy the rest of the family. I was still attached to reading, printing of words, and getting by heart ballads, of which I procured several. I had seen the ballad of Chevy Chase at New Gal-

loway, and was quite enraptured with it. About this time, and for years after, I spent every sixpence that friends or strangers gave me on ballads and penny histories. I carried bundles of these in my pockets, and read them when sent to look for cattle on the banks of Loch Greanoch, and on the wild hills in its neighbourhood. Those ballads that I liked most were Chevy Chase, Sir James the Rose, Jamie and Nancy, and all heroic and sorrowful ditties. This course of life continued through 1785, 1786, and 1787. In that time I had read, or rather studied daily, Sir David Lindsay, Sir William Wallace, the Cloud of Witnesses, the Hind let Loose, and all the books of piety in the place. My fame for reading, and a memory, was loud, and several said I was 'a living miracle.' I puzzled the honest elders of the church with recitals of Scripture, and discourses about Jerusalem, &c. &c. In 1787 and 1788, I borrowed from John Kellie, then in Tenotrie, and still residing, I believe, in Minigaff, Salmon's Geographical Grammar, and L'Estrange's version of Josephus. I got immense benefit from Salmon's book. It gave me an idea of geography and universal history, and I actually recollect at this day almost every thing it contains. I learned to copy its maps, but I did not understand the scale. In 1788, or early in 1789, Basil, Lord Dear, came to attend a committee of the gentlemen on the line of road between New Galloway and Newton-Stewart. He had made a map of the whole valley of Palneur from Dee to Cree, which map he lost on the moors near Kitterick. It was found and given to me, and I practised drawing plans of the glen of Palneur, correcting and printing the names of places, according to my own fancy.

As I could read and write, I was engaged by the head of two families in Kirkowen parish to teach their children. The name of the one was Robert Milligan, and the other was Alexander Milroy, laird of Morfad, an old and singular man, who had young grandchildren. I taught these pupils during the winter of 1787-8, but got acquainted with few books. I received copies of the numeration and multiplication tables from one M^cWilliam, a boy of my own age, and a brother teacher. I returned home in March 1788. My fees were fifteen or sixteen shillings. Part of this I laid out on books, one of which was the History of the Twelve Cæsars, translated from Suetonius; another, Cocker's Arithmetic, the plainest of all books, from which in two or three months I learned the four principal rules of arithmetic, and even advanced to the rule of three, with no additional assistance, except the use of an old copy-book of examples, made by some boy at school, and a few verbal directions from my brother Robert, the only

one of all my father's sons, by his first marriage, that remained with us. He was then a cattle-dealer on a small scale. In June 1788, I made a visit to Minigaff, and got from old John Simpson, a cartwright, and a great reader, the loan of several volumes of Ruddiman's Weekly or Monthly Magazine during 1773, 1774, and 1775, and an old, ill-written, and superstitious history of the Four Monarchies, of the Popes, the Kings of England, &c. My memory now contained a very large mass of historical facts and ballad poetry, which I repeated with pleasure to myself, and the astonished approbation of the peasants around me. On the 26th of May 1789, my father and his family left Kitterick, and came to herd in a place called Drigmorn, on Palkill Burn, four miles from Minigaff. He was engaged by Mr Ebenezer Wilson, now residing in Barncauchla. A prospect now opened of my attending Minigaff school. I set out by myself, and arrived in Minigaff village, where my friend, John Simpson, lived, and where Mr Cramond, school-master of Minigaff, dwelt. I think he lodged in Simpson's house. Mr Cramond received me, and I travelled every day from Drigmorn to Minigaff. I read some English, but applied chiefly to writing and arithmetic. In the course of the summer I ran over Dilworth's Arithmetic. But I was not in stout health; and the distance from school was great, and I generally attended only three days in the week. My teacher allowed this. I made the most of these days; I came about an hour before the school met; I pored on my arithmetic, in which I am still a proficient; and I regularly opened and read all the English books, such as the Spectator, World, &c.; brought by the children to school. I seldom joined in any play at the usual hour, but read constantly. It occurred to me that I might get qualified for a merchant's clerk. I therefore cast a sharp look towards the method of book-keeping, and got some idea of its forms by reading Hutton in the school, and by glancing at the books of other scholars. When the vacation came on, I was obliged to quit school. At Martinmas 1789, I was engaged by three families in the moors of Kells and Minigaff to teach their children.

A little before Whitsunday 1790, I returned home to Drigmorn. My father had been engaged to herd in Barncauchla, a farm within two miles of Minigaff village, to which farm we removed on the 26th May 1790. I had now easy access to school, and went regularly. As I now understood writing and accounts, in imitation of other lads in the country I wished to add to these a little French. These were the sum total of qualifications deemed necessary for a clerk intending to go to the West Indies or America.

I had, in 1787 and 1788, often admired and mused on the specimens of the Lord's Prayer in every language found in Salmon's Grammar. I had read in the magazines and Spectator, that Homer, Virgil, Milton, Shakspeare, and Newton, were the greatest of mankind. I had been early informed that Hebrew was the first language, by some elders and good religious people. In 1789, at Drigimorn, an old woman who lived near, showed me her psalm-book, which was printed with a large type, had notes on each page, and likewise what I discovered to be the Hebrew alphabet, marked letter after letter in the 119th psalm. I took a copy of these letters, by printing them off in my old way, and kept them.

I borrowed from one Jack M'Bride, at Bridgend of Cree, Chambaud's Rudiments of French Grammar. About the 30th of May 1790, I set to work on it. My indulgent master gave me whole pages of lessons, and in less than a fortnight I began to read lessons in the second volume of the *Diable Boiteux*, a book which he gave me. Robert Kerr, a son of William Kerr in Risque, was my friend and companion. He, in preparation for Grenada, whither he soon went, had for some time read French. His grammar was Boyer's, and the book which he read in, an old French New Testament. There was another grammar in the school, read by Robert Cooper, son of Mr Cooper, late tenant in Clarie. In the middle of the days I sat in the school and compared the nouns, verbs, &c. in all these books; and as I knew much of the New Testament by memory, I was able to explain whole pages of the French to Kerr, who was not diligent in study. About the 15th of June, Kerr told me that he had once learned Latin for a fortnight, but had not liked it, and still had the Rudiments beside him. I said, 'Do lend me them; I wish to see what the nouns and verbs are like, and whether they resemble our French.' He gave me the book; I examined it for four or five days, and found that the nouns had changes on the last syllable, and looked very singular. I used to repeat a lesson from the French Rudiments every forenoon in school. On the morning of the midsummer fair of Newton-Stewart, I set out for school, and accidentally put into my pocket the Latin Grammar instead of the thin French Rudiments. On an ordinary day, Mr Cramond would have chid me for this, but on that festive morning he was mellow, and in excellent spirits—a state not good for a teacher, but always desired in him by me, for he was then very communicative. With great glee he replied, when I told him my mistake, and showed the Rudiments, 'Gad, Sandy, I shall try these with Latin,' and accordingly read over to me no less than

two of the declensions. It was his custom with me to permit me to get as long lessons as I pleased, and never to fetter me by joining me to a class. There was at that time in the school a class of four boys advanced as far as the pronouns in Latin grammar. They ridiculed my separated condition. But before the vacation in August, I had reached the end of the Rudiments, knew a good deal more than they, by reading at home the notes on the foot of each page, and was so greatly improved in French that I could read almost any French book, at opening of it. I compared French and Latin, and rivetted the words of both in my memory by this practice. When proceeding with the Latin verbs, I often sat in the school all mid-day, and pored on the first pages of Robert Cooper's Greek Grammar, the only one I had ever seen. He was then reading Livy, and learning Greek. By help of his book I mastered the letters, but I saw the sense of the Latin rules in a very indistinct manner. Some boy lent me an old Corderius, and a friend made me a present of Eutropius. I got a common vocabulary from my companion Kerr. I read to my teacher a number of colloquies, and before the end of July was permitted to take lessons in Eutropius. There was a copy of Eutropius in the school that had a literal translation. I studied this last with great attention, and compared the English and Latin. When my lesson was prepared, I always made an excursion into the rest of every book, and my books were not like those of other schoolboys, opened only in one place, and where the lesson lay. The school was dissolved in the harvest. After the vacation, I returned to it a week or two to read Eutropius. A few days before the vacation, I purchased from an old man, named William Shaw, a very bulky and aged edition of Ainsworth's Dictionary. This was an invaluable acquisition to me. It had all the Latin words and the corresponding Greek and Hebrew, likewise a plan of ancient Rome, and a dictionary of proper names. I had it for eighteen-pence, a very low price. With these books I went off, about Martinmas, to teach the children of Robert Kerr, tenant in Garlarg, English reading, writing, arithmetic, and Latin. In his house I found several more books, Rudiman's Grammar—the most obscure of all works that ever were offered to children for their instruction, a book on which I laboured much to no great purpose—Cæsar, and Ovid. I employed every moment in pondering over these books. I literally read the dictionary throughout. My method was to revolve the leaves of the letter A, to notice all the principal words, and their Greek synonyms, not omitting a glance at the Hebrew; to do the same by B, and so on through the

book. I then returned from X and Z to A, and in these winter months I amassed a large stock of Latin and Greek vocabularies. From this exercise I took to Eutropius, Ovid, and Cæsar, or at times to Ruddiman's Grammar. The inverted order often perplexed me, and I frequently mistook, but also frequently discerned, the sense. The wild fictions of Ovid have had charms for me ever since. I was not a judge of simple and elegant composition; but when any passage contained wild, sublime, pathetic, or singular expressions, I both felt and tenaciously remembered them. Here I got another book, which from that time has influenced and inflamed my imagination. This was 'Paradise Lost,' of which I had heard, and which I was eager to see. I had the use of it for a year, until I replaced it with one of my own. I account my first acquaintance with *Paradise Lost* an era in my reading.

About Whitsunday 1791, I returned to school, able to read Eutropius, Ovid, Cæsar, and Ruddiman's Grammar, in an intelligent but not very correct style. I certainly knew a great deal of words and matters, but my prosody was bad, and my English neither fluent nor elegant. I found the young class reading Ovid and Cæsar, and afterwards Virgil. I laughed at the difficulty with which they prepared their lessons, and often obliged them by reading them over, to assist the work of preparation. My kind master never proposed that I should join them. He knew, indeed, that my time at school was uncertain; and he not only remitted a great part of my fees, but allowed me to read any book which I pleased. I studied his humour, and listened to his stories about his college life in the University of Aberdeen, where he had been regularly bred, and where he had been the class-fellow of Dr Beattie.

I found my schoolfellow, Robert Cooper, reading Livy, the Greek Grammar, and the Greek New Testament. A few days before going to school this season, I had formed an acquaintance with John Hunter, a miner, under Mr George Muir, and who lived in the High Row of the Miners' Village, at Mr Heron's lead-mines. This man and his family had come from Leadhills. He showed me many civilities, and gave me the use of the following books, that had belonged to a brother of his, then deceased:—*Luciana Dialogi, cum Tabula Cebetis*, Greek and Latin; a Greek New Testament; Homer's *Iliad*, Greek and Latin, in two small volumes; *Buchanani Historia Rerum Gest. Scoticarum*; and *Buchanani Opera Poetica*. The first portion of my wages had gone to Dumfries or Edinburgh, to buy Moore's Greek Grammar and Schrevelii Lexicon. I got the Grammar, but I forget how I obtained the

Lexicon. My master allowed me to pass over *Cæsar*, *Ovid*, *Virgil*, and *Sallust*, of which last, however, I borrowed copies, and read them privately, or at times with the young class. *Dr George Muir* was one of the young class, and my intimate friend. After I had read my own lessons, I almost always read along with him his lesson in *Virgil* and *Sallust*. But *Mr Cramond* permitted me to read *Livy* along with *Robert Cooper*, and *Buchanan's History* by myself. *Robert Cooper* was indolent, and I was proud to see that I had overtaken him, and could repeat the *Greek Grammar* and read *Greek* in the *New Testament* with more ease. He was given to *taw*, but I joined in no sports, but sat all day in the school. My amusement consisted in reading the books of history and poetry brought to school by the other scholars. At home I attacked *Homer*, and attempted to translate him by the help of the *Latin translation*. In June 1791, we were allowed to read a daily lesson in the first book and volume of the *Iliad*, which we prepared in the school. But I kept the second volume at home, and pored on it, till I fairly became, in an incorrect way, master of the sense, and was delighted with it. I remember that the fate of *Hector* and *Sarpedon* affected me greatly; and no sensation was ever more lively than what I felt on first reading the passage which declares that 'Jupiter rained drops of blood on the ground, in honour of his son *Sarpedon*, who was to fall far from his country.' My practice was to lay down a new and difficult book, after it had wearied me; to take up another—then a third—and to resume this rotation frequently and laboriously. I always strove to seize the sense; but when I supposed that I had succeeded, I did not weary myself with analysing every sentence.

In July 1791, I found my *Greek knowledge* increase. I began to translate sentences into *Greek*, by help of certain phrases at the end of *Schrevelius*. And so far as I remember, I, during that summer or autumn, attempted to introduce myself to your notice, by letters in *Greek* and *Latin*. The *Greek* one was short, and no doubt very inaccurate likewise, but less exceptionable. From that time you began to give me the use of books, and good advice as to my future behaviour and studies, which in my situation were very desirable. I had from you the loan of *Longinus*—the *Œdipus Tyrannus*—a volume of *Cicero's Orations*, which I read with great delight—and some others. All that summer and harvest were devoted to hard and continued reading, which was not limited to works in *Greek* and *Latin*, but extended to the history and poetry in the several books. I carried *Homer* in my pocket abroad, and studied him with great diligence.

I had long possessed the Hebrew letters, and knew the meanings of many words. I was now determined to learn that language. I sent for a Hebrew Grammar to Edinburgh, by the man who rode post. He brought me Robertson's Grammar, and the first edition of that book, which contains the Arabic alphabet in the last leaf. Mr Cramond, to whom I showed it, in September 1791, at the time when I received it, informed me that he once was able to read Hebrew, but that he had now forgotten it entirely. I had for a long time known the alphabet; I found the Latin easy and intelligible; I soon mastered the points; and, in the course of a month, got into the whole system of Jewish grammar. On an accidental visit to New Galloway, I was told by John Heron, a cousin of mine, and father to Robert Heron, author of several works, that he could give me a small old Lexicon belonging to his son. This present was to me astonishingly agreeable. It contained, besides the words and their Latin interpretations, the book of Ruth in the original. When I came home, some person informed me that a relation of Mr Wilson's, in Auchinleck, then living in Minigaff village, had in her possession a Hebrew bible, the property of her brother, Mr William Wilson, a dissenting clergyman in Ireland. She consented to let me have the use of it for several months. It was a small edition in several volumes, I forget from which press. I made good use of this loan; I read it throughout, and many passages and books of it a number of times.

I returned to school in summer 1792, and read Latin and Greek, rather for practice than in a rudimental way. The fault of our teacher was a slovenly inattention to grammatical minutiae, which hurt my future appearance at college, and is more or less the evil of all country schools. In return for this, he was kind, familiar, and communicative. His foible was the love of drink. He had nobody to prepare a comfortable meal for him in his little way, and he went to the alehouse in order to avoid the wearisomeness and inattention which distressed him at home. You know he at length became unfit for any public situation. Yet, had I been placed under a more formal and regular master, I should never have been able to make a respectable progress; for the broken state of my time would have compelled me to wait on children in low and young classes, in order to get by memory every part of the Rudiments; and every absent winter, and inaccuracy in reading, would have been a pretext for beginning me anew in the Rudiments and Grammar. All the accurate men have this way of thinking. Mr Dalzel, the professor of Greek, rebuked me severely for looking into Plato and Aristophanes in

my first year at college. I received his admonitions, but still persisted in reading those writers. Desultory study is no doubt a bad thing; but a lad whose ambition never ceases, but stimulates him incessantly, enlarges his mind and range of thought by excursions beyond the limits of regular forms.

In 1792, I read portions of Homer, Livy, Sallust, and any other author used in the school. In the autumn 1792, my companion, Cooper, left the school, and went, I believe, to Glasgow University. I could not imitate him, for want of funds. In the winter 1792-3, I engaged myself with Thomas Birkmyre, miller, of Minigaff Mill, and taught his children during that season till March 1793. My wages were only thirty shillings, but my object was to get a residence near Newton-Stewart, and to have liberty of going, in the winter forenights, to a school taught by Mr Nathaniel Martin, in Bridgend of Cree. Several young lads attended it with a view to exercise themselves in reading English poetry, and in spending their hours agreeably. Martin had been at Edinburgh, and possessed many new books, such as the Bee, Duncan's Cicero, some of the best English collections, and so forth. In the mill, I got Gulliver's Travels and Clarke's Evidences of Christianity. I did not understand the one, nor care much for the other. My companions at the night-school were William Gifford, lately a writer's first clerk in Edinburgh; one Thomas Baird, a clerk to a tobacconist; John Mackilwraith, son-in-law to John M'Kie, lately merchant in Castle Douglas. John Mackilwraith was an old friend, for his father-in-law was tenant of Kitterick in 1783. From him I got the loan of Baillie's English Dictionary, which I studied, and learned from it a vast variety of useful matters. I gained from it the Anglo-Saxon alphabet, the Anglo-Saxon paternoster, and many words in that venerable dialect.

In 1791, I had the loan of a stray volume of the Ancient Universal History from my neighbour schoolfellows, the MacLurgs, who lived in Glenhoash, below Risque. It contained the history of the ancient Gauls, Germans, Abyssinians, and others. It included a very incorrect copy of the Abyssinian alphabet, which, however, I transcribed, and kept by me for future occasions. I was completely master of the Arabic alphabet, by help of Robertson's Grammar, in the end of which (first edition) it is given in the most accurate manner.

In the autumn of 1792, about the time I went to the mill, I had, in the hour of ignorance and ambition, believed myself capable of writing an epic poem. For two years before, or rather from the time that I had met with *Paradise Lost*, sublime poetry was my favourite reading. Homer had encour-

raged this taste, and my schoolfellow, George Muir, had lent me, in 1791, an edition of Ossian's *Fingal*, which is in many passages a sublime and pathetic performance. I copied *Fingal*, as the book was lent only for four days, and carried the manuscript about with me. I chose Arthur, general of the Britons, for my hero, and during 1792-3 wrote several thousand of blank verses about his achievements. This was my first attempt in blank verse. In 1790, I had purchased 'the Grave,' a poem by Blair, and committed it almost entirely to memory.

I passed the summer of 1793 at home, and in long visits to my friends in Newton-Stewart, and other parts. During that summer I began to translate from Buchanan's poetical works, his *Fratres Franciscani*. I made an attempt to obtain the situation of teacher of the school of Mochrum, but the Rev. Mr Steven, minister of that parish, who received me very kindly, told me that it was promised, and that my youth would be objected to by the heritors and parish. In 1791, I bought for a trifle a manuscript volume of the lectures of Arnold Drackenbush, a German professor, on the lives and writings of the Roman authors, from Livius Andronicus to Quintilian. This was a learned work, and I resolved to translate and publish it. I remained at home during the winter of 1793-4, and employed myself in that task. My translation was neither elegant nor correct. My taste was improving; but a knowledge of elegant phraseology and correct diction cannot be acquired without some acquaintance with the world, and with the human character in its polished state. The most obscure and uninteresting parts of the *Spectator*, *World*, *Guardian*, and Pope's works, were those that described life and manners. The parts of those works which I then read with rapture, were accounts of tragic occurrences of great but unfortunate men, and poetry that addressed the passions.

Early in 1794, I resolved to go to Dumfries, and present my translation to the booksellers there. As I had doubt respecting the success of a *History of the Latin Writers*, I likewise composed a number of poems, chiefly in the Scottish dialect, and most of them very indifferent. I went to Dumfries in June 1794, and found that neither of the two booksellers there would undertake to publish my translation; but I got a number of subscription papers printed, in order to promote the publication of the poems. I collected by myself and friends four or five hundred subscriptions. At Gatehouse, a merchant there, an old friend, gave me a very curious and large printed copy of the *Pentateuch*, which had belonged to the celebrated Andrew Melvin, and the *Hebrew Dictionary of Pagninus*, a huge folio. During the visit to Dumfries I was introduced to

Robert Burns, who treated me with great kindness ; told me, that if I could get out to college without publishing my poems, it would be better, as my taste was young and not formed, and I would be ashamed of my productions when I could write and judge better. I understood this, and resolved to make publication my last resource. In Dumfries I bought six or seven plays of Shakspeare, and never read any thing, except Milton, with more rapture and enthusiasm. I had seen his poems before.

During this summer, my friend M'Harg being in Edinburgh, employed as a hawker, or itinerant dealer in tea and other articles, described my situation to James Kinnear, a journeyman printer, a very respectable man, who informed him, that if I could be brought to town, Dr Baird and several other gentlemen would take notice of me. In consequence of this communication, I arrived in Edinburgh at the beginning of November 1794."

Such is Dr Murray's singular narrative, on which any comment would but weaken the impression which it is calculated to convey. We proceed to state, that on his arrival in Edinburgh he was kindly received by Mr Kinnear. The only letter of introduction which he brought to town, was one from Mr Maitland to Dr Baird, who received him with great kindness. Too-much praise cannot be paid to these two gentlemen for their generous conduct, particularly as they were strangers to each other, and were actuated solely by the motive of bringing into notice indigent merit, and opening to a young man of extraordinary promise a wider field for the cultivation of his genius and talents. Nor was Murray unworthy of the patronage of these respectable individuals. On the first day after his arrival in town, he underwent an examination in presence of Dr Baird, Dr Finlayson, and Dr Moodie ; and, to use the language of one of his examiners, he read freely, and also explained and analysed accurately, a passage of French, an ode of Horace, a page of Homer, and a Hebrew psalm. In consequence of his uncommon acquirements, not only the direct advantages of the college were procured to him without expense, but such pecuniary aid was extended to him as was necessary for the effectual prosecution of his studies. At the end of two years he obtained a bursary from the town ; and about that time he began to support himself by carrying on private teaching. Dr Baird continued through life his faithful friend and patron.

Dr Murray, after this period, prosecuted a successful career as a man of letters. In 1806, he undertook the ministerial charge of the parish of Urr, in his native county, which he resigned in 1812, on being appointed Professor of Oriental

Languages at Edinburgh. Unfortunately, the weakly constitution of this extraordinary genius sank under the fatigues of his first session, and he died, universally and deeply lamented, April 15, 1813. An elegant monument, commemorative of his life and talents, was some years afterwards erected by subscription near the place of his nativity.

SIR WILLIAM JONES.

THE extraordinary ability and industry displayed by Dr Murray, the subject of the preceding sketch, in the acquirement of languages, meet with few parallels in the annals of British biography; one of the most conspicuous instances of successful exertion in this department of learning, is found in the biography of Sir William Jones, by whom the cultivation of literature was happily united with the most active pursuit of business.

William Jones was born in London, September 20, 1746. He lost his father when only three years of age, and the care of his education fell on his mother, a lady of uncommon endowments. While yet in infancy, he was a miracle of industry, and showed how strongly he was inspired with the love of knowledge. It is related of him, that, when he was only three or four years of age, if he applied to his mother for information upon any subject, her constant answer to him was, "Read, and you will know." He thus acquired a passion for books, which only grew in strength with increasing years. At the close of his seventh year, he was placed at the school at Harrow, and in 1764 he entered University College, Oxford. Unlike the majority of youths at these educational establishments, young Jones devoted his whole mind to his studies, his voluntary exertions always exceeding in amount his prescribed task. Such was his activity at school, that one of his masters was wont to say of him, "that if he were left naked and friendless on Salisbury Plain, he would, nevertheless, find the road to fame and riches." At this time he was frequently in the habit of devoting whole nights to study, when he would generally take coffee or tea to ward off sleep—a practice, however, which was any thing but commendable. He had already, merely to divert his leisure hours, commenced the study of the law; and it is mentioned that he would often amuse and surprise his mother's legal acquaintance, by putting cases to them from

an abridgement of Coke's Institutes; which he had read and mastered.

The leaning of Jones's genius seems to have been towards the study of languages. It may be very frequently remarked, that individuals who possess the knack of acquiring languages, seldom have a genius for any thing else; but such does not appear to have been the case with respect to Jones, whose intellect grasped at several of the most important departments of human knowledge and polite learning. While at Oxford, he became desirous of studying the Oriental languages, and he supported a native of Aleppo, at his own expense, to instruct him in the pronunciation of the Arabic tongue. The Greek and Latin languages he was already master of. During the college vacations, he embraced the opportunity of learning riding and fencing, and to read all the best authors in Italian, Spanish, Portuguese, and French. To these accomplishments he found leisure to add dancing, the use of the broadsword, music, and the art of playing on the Welsh harp, the instrument of the country of his forefathers.

While engaged in these various studies, he did not allow himself to rest in the pursuit of the object he had in view, namely, a fellowship, in order to spare his mother the expense of his education. Not succeeding to his wish in obtaining this object of his ambition, he accepted, in 1765, the office of tutor to Lord Althorp, afterwards Earl Spencer; and, some time afterwards, he obtained a fellowship also. He availed himself of a residence at the German Spa, with his pupil, in 1767, to acquire the German language, and, on his return, translated into French a Persian life of Nadir Shah, brought over in manuscript by the king of Denmark, at the request of the under secretary of the Duke of Grafton. Another tour to the Continent with his pupil and family followed, which occupied his time until 1770, when, his tutorship ceasing, he entered himself as a law student in the Temple. He did not, however, wholly sacrifice literature to his professional pursuits; but, on the appearance of the life and works of Zoroaster, by Anquetil du Perron, he vindicated the University of Oxford, which had been attacked by that writer, in an able pamphlet in the French language, which he wrote with great elegance. He also published, in 1772, a small collection of poems, chiefly from the poets of Asia, and was the same year elected a fellow of the Royal Society. In 1774 appeared his work *De Poesi Asiatica*, containing commentaries on Asiatic poetry in general, with metrical specimens in Latin and English. He was soon after called to the bar, and, in 1776, made a commissioner of bankrupts. About this time, his correspondence with his

pupil evinced the manly spirit of constitutional freedom by which he was actuated ; and to his feelings on the American contest he gave vent in a spirited Latin Ode to Liberty. In 1778 appeared his translation of the Orations of Isæus, with a prefatory discourse, notes and commentary, which, for elegance of style, and profound critical and historical research, excited much admiration.

In the meantime, he rapidly advanced in professional reputation, although his opinion of the American contest stood in the way of his progress to legal honours. The tumults of 1780 induced him to write a pamphlet on the Legal Mode of Suppressing Riots ; and, in the following winter, he completed a translation from the Arabic of seven poems, of the highest repute. He also wrote the much admired ode, commencing " What constitutes a State ? " These pursuits did not prevent a professional Essay on the Law of Bailments. He distinguished himself, in 1782, among the friends to a reform in Parliament, and also became a member of the Society for Constitutional Information. The same year he drew up a Dialogue between a Farmer and a Country Gentleman, on the Principles of Government ; for the publication of which, the dean of St Asaph, afterwards his brother-in-law, had a bill of indictment preferred against him for sedition. Upon this event, he sent a letter to Lord Kenyon, then chief-justice of Chester, owning himself the author, and defending his positions. On the accession of the Shelbourne administration, through the influence of Lord Ashburton he obtained, what had long been the object of his ambition, the appointment of judge in the Supreme Court of Judicature, Bengal, to which he was nominated in March 1783, and knighted.

Jones (now Sir William) arrived at Calcutta in September 1783. Here a new and extensive field of action opened to him. While filling the office of judge in the Supreme Court of Bengal, and loaded with professional duties of the most laborious nature, he contrived to do more than ever in the study of general literature and philosophy. He had scarcely arrived in the country when he exerted himself to establish a society in Calcutta on the model of the Royal Society of London, of which he officiated as president as long as he lived, enriching its Transactions every year with the most elaborate and valuable disquisitions in every department of Oriental philology and antiquities.

Almost his only time for study now, was during the vacation of the courts ; and here is the account, as found among his papers, of how he was accustomed to spend his day during the long vacation in 1785. In the morning, after writing one

letter, he read several chapters of the Bible, and then studied Sanscrit grammar and Hindoo law ; the afternoon was given to the geography of India, and the evening to Roman history ; when the day was closed by a few games at chess, and the reading of a portion of Ariosto.

Already, however, his health was beginning to break down under the climate, and his eyes had become so weak, that he had been obliged to discontinue writing by candle-light. But nothing could prevent him from pursuing the studies he loved, while any strength remained to him. Even while confined by illness to his couch, he taught himself botany ; and it was during a tour he was advised to take for the recovery of his health, that he wrote his learned "Treatise on the Gods of Greece, Italy, and India," as if he had actually so disciplined his mind that it adopted labour like this almost for a relaxation.

His health after a time was partially restored ; and we find him again devoting himself both to his professional duties and his private studies, with more zeal and assiduity than ever. When business required his attendance daily in Calcutta, he resided at a country house on the banks of the Ganges, about five miles from the city. "To this spot," says his amiable and intelligent biographer, Lord Teignmouth, "he returned every evening after sunset, and in the morning rose so early as to reach his apartments in town, by waking, at the first appearance of dawn. The intervening period of each morning, until the opening of court, was regularly allotted and applied to distinct studies." At this time his hour of rising used to be between three and four.

During the vacation of the court he was equally occupied. Writing from Crishna, his vacation residence, in 1787, he says, "We are in love with this pastoral cottage ; but though these three months are called a vacation, yet I have no vacant hours. It rarely happens that favourite studies are closely connected with the strict discharge of our duty, as mine happily are : even in this cottage I am assisting the court by studying Arabic and Sanscrit, and have now rendered it an impossibility for the Mahomedan or Hindoo lawyers to impose upon us with erroneous opinions." It was these constant exertions, in truth, that gave its chief enjoyment to his life. In connection with this pursuit, he employed his active mind in planning the compilation of a complete digest of the Hindoo and Mahomedan laws, with a view to the better administration of justice among the natives. This work he did not live to finish, but its subsequent accomplishment was entirely owing to his recommendation and primary labours. His object in this instance was

to secure a due attention to the rights of the natives ; and he showed himself equally jealous of those of the British inhabitants, by opposing an attempt to supersede the trial by jury.

In 1789, he gave to the world the translation of an Indian drama, entitled *Sacontala*, or the Fatal Ring. His translation of the Ordinances of Menu, the famous Hindoo law-giver, appeared early in 1794, and is very interesting to the student of ancient manners and opinions. This eminent and admirable man, however, at last fell a sacrifice to an undue zeal in the discharge of his duty and his pursuits in literature. In April 1794, he was seized at Calcutta with an inflammation of the liver, which terminated his life on the twenty-seventh of the same month, in the forty-eighth year of his age.

It was by a persevering observance to a few simple maxims that Sir William Jones was principally enabled to accomplish what he did. One of these was never to neglect an opportunity of improvement : another was, that whatever had been attained by others was attainable by him, and that, therefore, the real or supposed difficulties of any pursuit formed no reason why he should not engage in it, and with perfect confidence of success. "It was also," says his biographer, Lord Teignmouth, "a fixed principle with him, from which he never voluntarily deviated, not to be deterred, by any difficulties which were surmountable, from prosecuting to a successful termination what he had once deliberately undertaken. But what appears to me," adds his lordship, "more particularly to have enabled him to employ his talents so much to his own and the public advantage, was the regular allotment of his time to particular occupations, and a scrupulous adherence to the distribution which he had fixed : hence all his studies were pursued without interruption or confusion."

Few men have died more regretted, or whose loss to the world of letters was more deeply felt, than Sir William Jones, who, as a linguist, has scarcely ever been surpassed. His acquaintance with the history, philosophy, laws, religion, science, and manners of nations, was most extensive and profound. As a poet, too, he would probably have risen to great eminence, if his ardour to transplant foreign beauties, and his professional and multifarious pursuits, had allowed him to cultivate his own invention with sufficient intensity. His private character was estimable in all the domestic relations, and he was equally liberal and spirited in public life.

The memory of Sir William Jones received many testimonies of respect, both in England and India. The directors of the East India Company voted him a monument in St Paul's Cathedral, and a statue in Bengal ; but the most effectual mo-

ument of his fame was raised by his widow, who published a splendid edition of his works, in six vols. 4to, 1799, and also, at her own expense, placed a fine marble statue of him, executed by Flaxman, in the antechamber of University College, Oxford.

The life of one who perished in the attempt to emulate this distinguished Oriental scholar, forms the succeeding biographic sketch.

JOHN LEYDEN.

THE subject of this brief memoir will be long distinguished among those whom the elasticity and ardour of genius have raised to distinction from an obscure and humble origin. John Leyden was the son of a person whose vocation was little above that of a day-labourer, and who had been some time settled upon the estate of Cavers, in the vale of Teviot, Roxburghshire, in the south of Scotland. He was born at the village of Denholm, on the 8th of September 1775, and bred, like other children in the same humble line of life, to such country labour as suited his strength.

About a year after his birth, the parents of Leyden removed to Henlawshiel, a lonely cottage about three miles from Denholm, on the farm of Nether Tofts, which was then held by Mr Andrew Blithe, his mother's uncle. Here they lived for sixteen years, during which his father was employed, first as shepherd, and afterwards in managing the whole business of the farm, his relation having had the misfortune to lose his sight. The cottage, which was of very simple construction, was situated in a wild pastoral spot near the foot of Ruberslaw, on the verge of the heath which stretches down from the sides of that majestic hill. The simplicity of the interior corresponded with that of its outward appearance. But the kind affections, cheerful content, intelligence and piety, that dwelt beneath its lowly roof, made it such a scene as poets have imagined in their descriptions of the innocence and happiness of rural life. Leyden was taught to read by his grandmother, who, after her husband's death, resided in the family of her son. Under the care of this venerable and affectionate instructress, his progress was rapid. That insatiable desire of knowledge which afterwards formed so remarkable a feature in his character, soon began to show itself. The historical passages of the Bible first caught his attention; and it was not long be-

fore he made himself familiarly acquainted with every event recorded in the Old and New Testament.

Thus Leyden was ten years of age before he had an opportunity of attending a public place of education ; and as the death of his first teacher, William Wilson, schoolmaster at Kirktown, soon after took place, the humble studies of the future poet, antiquary, and Orientalist, were adjourned till the subsequent year (1786), when a Mr W. Scott taught the same school. But the sacred fire had already caught to the ready fuel which nature had adjusted for its supply. The ardent and unutterable longing for information of every description, which characterised John Leyden as much as any man who ever lived, was now roused, and upon the watch. The rude traditionary tales and ballads of the once warlike district of Teviotdale, were the readiest food which offered itself to this awakening appetite for knowledge. These songs and legends became rooted in his memory ; and he so identified his feelings with the wild, adventurous, and daring characters which they celebrate, that the associations thus formed in childhood, and cherished in youth, gave an eccentric and romantic tincture to his own mind, and many, if not all, of the peculiarities of his manner and habits of thinking, may be traced to his imitating the manners and assuming the tone of a borderer of former times.

Other sources of information now began to offer themselves, scanty, indeed, compared to those which are accessible to thousands of a more limited capacity, but to Leyden as invaluable as an iron spike or a Birmingham knife would have been to Alexander Selkirk during his solitary residence on Juan Fernandez. At a country school he acquired some smattering of the Latin language, principally through his own extraordinary efforts, for he had none to assist him in his juvenile exercises ; and to this early dependence on himself he imputed the wonderful facility which he afterwards possessed in the acquisition of languages. As is nearly always the case when an aptitude for learning is shown by a boy in the ranks of the peasantry in Scotland, the parents of young Leyden determined to breed their son up to the church of Scotland, though without any means whatever of pushing him forward. Mr Duncan, a Cameronian minister at Denholm, became now his instructor in Latin. It does not appear that he had any Greek tutor ; nevertheless, he probably had acquired some knowledge of the elements of that language before he attended the College of Edinburgh in 1790, for the purpose of commencing his professional studies. The late worthy and learned Professor Andrew Dalzell used to describe, with some humour, the astonishment

and amusement excited in his class when John Leyden first stood up to recite his Greek exercises. The rustic yet undaunted manner, the humble dress, the high harsh tone of his voice, joined to the broad provincial accent of Teviotdale, discomposed, on this first occasion, the gravity of the professor, and totally routed that of the students. But it was soon perceived that these uncouth attributes were joined to qualities which commanded respect and admiration. The rapid progress of the young rustic attracted the approbation and countenance of the professor, who was ever prompt to distinguish and encourage merit; and to those among the students who did not admit literary proficiency as a shelter for the ridicule due since the days of Juvenal to the scholar's torn coat and unfashionable demeanour, Leyden was in no respect averse from showing strong reasons, adapted to their comprehension, and affecting their personal safety, for keeping their mirth within decent bounds.

Leyden was now at the fountain-head of knowledge, and availed himself of former privations, by quaffing it in large draughts. He not only attended all the lectures usually connected with the study of theology, but several others, especially some of the medical classes—a circumstance which afterwards proved important to his outset in life, although at the time it could only be ascribed to his restless and impatient pursuit after science of every description. Admission to these lectures was easy, from the liberality of the professors, who throw their classes gratuitously open to young men educated for the church—a privilege of which Leyden availed himself to the utmost extent. There were, indeed, few branches of study in which he did not make some progress. Besides the learned languages, he acquired French, Spanish, Italian, and German, was familiar with the ancient Icelandic, and studied Hebrew, Arabic, and Persian.

But though he soon became particularly distinguished by his talents as a linguist, few departments of science altogether escaped his notice. He investigated moral philosophy with the ardour common to all youths of talent who studied ethics, under the auspices of Professor Dugald Stewart, with whose personal notice he was honoured. He became a respectable mathematician, and was at least superficially acquainted with natural philosophy, natural history, chemistry, botany, and mineralogy. These various sciences he acquired in different degrees, and at different times, during his residence at college. They were the fruit of no very regular plan of study: whatever subject interested his mind at the time, attracted his principal attention till time and industry had overcome the difficulties

which it presented, and was then exchanged for another pursuit.

The vacations which our student spent at home were employed in arranging, methodising, and enlarging the information which he acquired during his winter's attendance at college. His father's cottage affording him little opportunity for quiet and seclusion, he was obliged to look out for accommodations abroad, and some of his places of retreat were sufficiently extraordinary. In a wild recess, in the den or glen which gives name to the village of Denholm, he contrived a sort of furnace for the purpose of such chemical experiments as he was adequate to perform. But his chief place of retirement was the small parish church, a gloomy and ancient building. To this chosen place of study, usually locked during week-days, Leyden made entrance by means of a window, read there for many hours in the day, and deposited his books and specimens in a retired pew. It was a well-chosen spot of seclusion, for the kirk (excepting during divine service) is a place never intruded upon either by casual visitors or for any ecclesiastical purpose.

Books as well as retirement were necessary to the progress of Leyden's studies; but these were of difficult attainment, and he subjected himself to the utmost privations to purchase those that could not be borrowed from his friends. The reputation of his prosperous career of learning, however, introduced him to the acquaintanceship of a number of persons of eminence in letters, both in Edinburgh and elsewhere, which tended to advance him in life. In the year 1796, after five or six years spent at the College of Edinburgh, the recommendation of Professor Dalzell procured him the situation of private tutor to the sons of Mr Campbell of Fairfield—a situation which he retained for two or three years. He attended the two young gentlemen under his charge to their studies at the College of St Andrew's. Here he had the advantage of the acquaintance of Professor Hunter, an admirable classical scholar, and to whose kind instructions he professed much obligation.

On Leyden's return to Edinburgh from St Andrew's, he resided with his pupils in the family of Mr Campbell, where he was treated with that respect and kindness which every careful father will pay to him whose lessons he expects his children to receive with attention and advantage. His hours, excepting those of tuition, were at his own uncontrolled disposal, and such of his friends as chose to visit him at Mr Campbell's, were secure of a hospitable reception. This class began now to extend itself among persons of an older standing than his contemporaries, and embraced several who had been placed by fortune, or had risen by exertions, to that fixed station in so-

ciety to which his college intimates were as yet only looking forward. His acquaintance with Mr Richard Heber was the chief means of connecting him with several families of the former description. Among these may be reckoned the late Lord Woodhouselee, Mr Henry Mackenzie, the distinguished author of the *Man of Feeling*, and the Rev. Mr Sidney Smith, then residing in Edinburgh, from all of whom Leyden received flattering attention, and many important testimonies of the interest which they took in his success. By the same introduction, he became intimate in the family of Mr Walter Scott, where a congenial taste for ballad romance and border antiquities, as well as a sincere admiration of Leyden's high talents, extensive knowledge, and excellent heart, secured him a welcome reception; and by degrees his society extended itself still more widely, and comprehended almost every one who was distinguished for taste or talents in Edinburgh.

The manners of Leyden, when he first entered the higher ranks of society, were very peculiar. He possessed a large share of animal spirits, and he delighted to be accounted a master in out-of-door sports and athletic exertions, to which he was very partial. In company, his manner was animated and unpolished, and he perhaps erred in reckoning at too low a value the forms of a well-bred community, a circumstance which often excited a prejudice against him on his first appearance. This seems to have arisen from a false idea of sustaining his independence of feeling, and of marking the humility of his origin. He bore, however, with great good humour, all decent raillery on his rough manners, and was often ready to promote such pleasantry by his own example. His temper was in reality of an exceedingly gentle nature; and to gratify the slightest wish of a friend, he would engage at once in the most toilsome and difficult researches. He also avoided the most fatal errors of men of genius. He was rigidly temperate, and the purity of his morals was attested by the most blameless line of conduct. His temperance even approached to abstinence; and although his pecuniary resources were exceedingly slender, he managed his funds so as to avoid all embarrassment.

In 1800, Leyden was ordained a preacher; but his pulpit appearances were more scholarly than evangelical, and it does not appear that he cared about pursuing the profession of a clergyman. He now engaged himself in procuring materials for the "*Minstrelsy of the Scottish Border*," a task congenial to his poetic temperament. In 1802, he was engaged by Mr Constable to edit the *Scots Magazine*, which he did for five or six months; and this employment was followed by the writing

of his "Scenes of Infancy," a poem exhibiting his own early feelings and recollections, interwoven with the descriptive and traditional history of his native vale of Teviot. But all this was but a desultory mode of living. The writing of poetry yields no revenue, and barely furnishes bread to those whose talents are of the loftiest order. The friends of Leyden began now to be anxious for his permanent settlement in life, and he seconded their views. In 1802, he made some overtures to the African Society, for undertaking a journey of discovery through the interior of Africa; but from this rash enterprise he was turned by the prospect of promotion in another quarter. A representation was made to a member of the Board of Control, stating the talents and disposition of Leyden, and it was suggested that such a person might be usefully employed in investigating the language and learning of the Indian tribes. The only appointment that could be given in this quarter was, however, that of surgeon's assistant, which could be held by none but a person having a surgical degree, and who could sustain an examination before the Medical Board at the India House.

It was upon this occasion that Leyden showed, in their utmost extent, his wonderful powers of application and comprehension. He at once intimated his readiness to accept the appointment under the conditions annexed to it; and availing himself of the superficial information he had formerly acquired by a casual attendance upon one or two of the medical classes, he gave his whole mind to the study of medicine and surgery, with the purpose of qualifying himself for his degree in the short space of five or six months. The labour which he underwent on this occasion was actually incredible; but with the powerful assistance of a gentleman of the highest eminence in his profession (the late Mr John Bell of Edinburgh), he succeeded in acquiring such a knowledge of this complicated and most difficult art, as enabled him to obtain his diploma as surgeon with credit, even in the city of Edinburgh, so long famed for its medical school, and for the wholesome rigour adopted in the distribution of degrees. Another Scottish university conferred the degree of M.D. upon him; and he immediately prepared to leave the country. It is not necessary in this sketch to detail the difficulties he encountered before his ultimate departure for India. After some trouble, he procured a passage in the *Hugh Inglis*, in which vessel he sailed in the beginning of April 1803. Having arrived at Madras, he was transferred to the duties of his new profession; but it was speedily demonstrated that his constitution was unfitted for the climate. He was therefore obliged to leave the presi-

dency of Madras, suffering an accumulation of diseases, and reached with difficulty Prince of Wales Island, situated on the coast of Malacca. In this more salubrious spot he resided some time, busily engaging himself in the pursuit of the languages and literature of the East, and in which he soon acquired an extraordinary degree of knowledge, calculated to be extensively beneficial to his countrymen. He also continued to indulge his poetic fancies, and kept up a constant intercourse by letters with a number of his old friends in Europe, and some of his epistles furnish many amusing details of Oriental life and manners, as well as of his own arduous researches.

The health of Leyden being restored, in 1806 he took leave of Prince of Wales Island, regretted by many friends, whom his eccentricities amused, his talents enlightened, and his virtues conciliated. His reception at Calcutta, and the effect he produced upon society, were exceedingly flattering. The efficient and active patronage of Lord Minto—himself a man of letters, a poet, and a native of Teviotdale—was of most essential service to Leyden, and no less honourable to the governor-general. He was appointed a professor in the Bengal college, a promotion suited to his studies; and from this function he was subsequently transferred to fill the office of a judge of the twenty-four Purgunnahs of Calcutta. In this capacity he had a charge of police, which jumped well with his odd humour, for the task of pursuing and dispersing the bands of robbers who infest Bengal had something of active and military duty. He also exercised a judicial capacity among the natives, to the discharge of which he was admirably fitted, by his knowledge of their language, manners, and customs. To this office a very considerable yearly income was annexed. This was neither expended in superfluities, nor even in those ordinary expenses which the fashion of the East has pronounced indispensable; for Dr Leyden kept no establishment, gave no entertainments, and was, with the receipt of this revenue, the very same simple, frugal, and temperate student, which he had been at Edinburgh. But, exclusive of a portion remitted home for the most honourable and pious purpose; his income was devoted to the pursuit which engaged his whole soul—to the increase, namely, of his acquaintance with Eastern literature in all its branches. The expense of native teachers of every country and dialect, and that of procuring from every quarter Oriental manuscripts, engrossed his whole emoluments, as the task of studying under the tuition of the interpreters, and deciphering the contents of the volumes, occupied every moment of his spare time. "I may die in the attempt," he writes to a friend; "but if I die without surpassing Sir Wil-

liam Jones a hundredfold in Oriental learning, let never a tear for me profane the eye of a borderer." The term was soon approaching when these regrets were to be bitterly called forth, both from his Scottish friends, and from all who viewed with interest the career of his ardent and enthusiastic genius, which, despising every selfish consideration, was only eager to secure the fruits of knowledge, and held for sufficient reward the fame of having gathered them.

In 1811, an expedition having been formed to proceed to the island of Java, Leyden accompanied the governor-general and the forces for the purpose of investigating the manners, language, and literature of the tribes which inhabit that island, and partly also because it was thought his extensive knowledge of the Eastern dialects and customs might be useful in settling the government of the country, or in communicating with the independent princes in the neighbourhood of the Dutch settlements. His spirit of romantic adventure led him literally to rush upon death; for, with another volunteer who attended the expedition, he threw himself into the surf, in order to be the first Briton of the expedition who should set foot upon Java. When the success of the well-concerted movements of the invaders had given them possession of the town of Batavia, Leyden displayed the same ill-omened precipitation, in his haste to examine a library, or rather a warehouse of books, in which many Indian manuscripts of value were said to be deposited. A library in a Dutch settlement was not, as might have been expected, in the best order; the apartment had not been regularly ventilated, and, either from this circumstance, or already affected by the fatal sickness peculiar to Batavia, Leyden, when he left the place, had a fit of shivering, and declared the atmosphere was enough to give any mortal a fever. The pre-sage was too just; he took his bed, and died in three days, on the eve of the battle which gave Java to the British empire.

Thus died John Leyden, in the thirty-sixth year of his age, precisely at the period when every avenue of new and interesting discovery was opening to his penetrating research. His great abilities—his prospects of benefiting his fellow-creatures—his stores of Eastern learning, were all in a moment quenched and sunk in death; a catastrophe the more lamentable, from having been produced by a culpable degree of rashness and disregard of personal suffering.

The poetical remains of Leyden were collected and given to the public in 1821, and in some instances exhibit a power of numbers, which, for the mere melody of sound, has seldom been excelled in English poetry. Besides his poetical works, he compiled and translated the "Commentaries of Baber,"

from the Turki language, a work of great interest to those who love the study of Indian antiquities, and which was published in 1826, for the benefit of his aged father.

The remains of Leyden, honoured with every respect by Lord Minto, repose in a distant land, far from the green-sod graves of his humble ancestors at Hazeldean, to which he bids an affecting farewell, in a solemn passage concluding his "Scenes of Infancy." His language is that of nature, moved by the kindly associations of country and of kindred affections. But little reckes it where our bodies rest and exhale into their primitive elements. The best epitaph is the story of a life engaged in the practice of virtue and the pursuit of honourable knowledge; the best monument, the regret of the worthy and the wise.*

DR ROBERT WATT.

THE amiable, accomplished, and most industrious subject of this memoir, was born in May 1774. His father, John Watt, possessed a small farm in Ayrshire, which had belonged to the family for several generations, but which was sold shortly after his death, in 1810. Robert was the youngest of three sons, and, with his elder brothers, was employed, during his boyhood, in attending school, and in assisting his father in the management of the farm. His early life, it would seem, was subject to considerable hardships, and afforded few opportunities for cultivating his mind. But, as with many of his countrymen, ardour in the pursuit of knowledge overcame all the difficulties of his position, and by his own exertions he rose, in the course of a brief career, to great eminence in the medical profession, and left behind him a work of vast utility in literature, the compilation of which must have cost a labour almost incalculable. In a letter of his now before us, written a short time before his death, we find that he gives, at the request of a friend, some memoirs of his early years; and as these are not only illustrative of his life, but furnish an interesting instance of the bent and progress of genius under many disadvantages, we do not hesitate to extract them here.

* The above article is chiefly condensed from a memoir of Leyden, written by Sir Walter Scott for the Edinburgh Annual Register, and republished in the cheap and elegant series of his *Miscellaneous Prose Works*.

"Among the first things I remember very distinctly was being sent to school, about the age, I suppose, of five or six. I was only a short time with my first teacher, and remember little of what was done. With two or three masters I learned to read English, write, and count. At this time I recollect being rather a favourite with the teacher, and suffering from the envy of my schoolfellows on that account. From the difficulties I had to encounter in every branch of learning afterwards, I think my proficiency at that time must have been very small.

About the age of thirteen, I became a ploughboy to a farmer in a neighbouring parish. After this, I was sometimes at home, and sometimes in the service of other people, till the age of seventeen. Before this age, I had begun to acquire a taste for reading, and spent a good deal of my time in that way. The books I read were such as I found about my father's house; among which I remember the 'Pilgrim's Progress,' 'The Lives of Scots Worthies,' and so on. A spirit for extending my knowledge of the country, and other things, had manifested itself early, in various forms. When very young, my great ambition was to be a chapman; and it was long before the sneers of my friends could drive me from this favourite project. It was the same spirit, and a wish of doing something for myself, that made me go into the service of other farmers. I saw more than I did at home, and I got money which I could call my own. My father's circumstances were very limited; but they were equal, with his own industry, to the bringing up of his family, and putting them to trades.

With a view to extend my knowledge of the country, I went with a party into Galloway, to build stone dykes. On getting there, however, the job which we had expected was abandoned, on account of some difference taking place between the proprietor of the land and the cultivator; and we went to the neighbourhood of Dumfries, where our employer had a contract for making part of the line of road from Sanquhar to Dumfries. During my short stay in Galloway, which was at Loch Fergus, in the vicinity of Kirkcudbright, I lodged in a house where I had an opportunity of reading some books, and saw occasionally a newspaper. This enlarged my views, increased the desire to sea and learn more, and made me regret exceedingly my short stay in the place.

On our arrival at Dumfries, we were boarded on the farm of Ellisland, then in the possession of Robert Burns. The old house which he and his family had recently occupied became our temporary abode. This was only for a few days. I

was lodged, for the rest of the summer, in a sort of old castle, called the *Isle*, from its having been at one time surrounded by the Nith. While at Ellisland, I formed the project of going up to England. This was to be accomplished by engaging as a drover of some of the droves of cattle that continually pass that way from Ireland and Scotland. My companions, however, disapproved of the project, and I gave it up. During the summer I spent in Dumfriesshire, I had frequent opportunities of seeing Burns, but cannot recollect of having formed any opinion of him, except a confused idea that he was an extraordinary character. While here, I read Burns's Poems; and from an acquaintance with some of his relations, I occasionally got from his library a reading of other works of the same kind. With these I used to retire into some of the concealed places on the banks of the Nith, and pass my leisure hours in reading, and occasionally tried my hand in writing rhymes myself. My business at this time consisted chiefly in driving stones, from a distance of two or three miles, to build bridges and sewers. This occupation gave me a further opportunity of perusing books; and although, from the desultory nature of my reading, I made no proficiency in any one thing, I acquired a sort of smattering knowledge of many, and a desire to learn more. From this period, indeed, I date the commencement of my literary pursuits.

On my return home, the first use I made of the money I had saved was to purchase a copy of Bailey's Dictionary, and a copy of Burn's English Grammar. With these I began to instruct myself in the principles of the English language, in the best way I could. At this time, my brother John, who had been in Glasgow for several years, following the business of a joiner and cabinetmaker, came home, with the design of beginning business for himself in the country. It was proposed that I should join him. This was very agreeable to me. I had at that time no views of any thing higher; and it accorded well with the first bent of my mind, which was strongly inclined to mechanics. If of late all my spare hours had been devoted to reading, at an earlier period they had been equally devoted to mechanics. When very young, I had erected a turning-lathe in my father's barn; had procured planes, chisels, and a variety of other implements, which I could use with no small degree of dexterity.

For some time my mind was wholly occupied with my new trade. I acquired considerable knowledge and facility in constructing most of the different implements used in husbandry, and could also do a little as a cabinetmaker. But I soon be-

gan to feel less and less interest in my new employment. My business came to be a repetition of the same thing, and lost all its charms of novelty and invention. The taste for reading which I had brought from the south, though it had suffered some abatement, had not left me. I was occasionally poring over my dictionary and grammar, and other volumes that came in my way. At this time a circumstance occurred which gave my mind an entirely new bent. My brother, while at Glasgow, had formed a very close intimacy with a student there. This young gentleman, during the vacation, came out to see my brother, and pass a few days in the country. From him I received marvellous accounts of what mighty things were to be learned, what wonders to be seen, about a university; and I imbibed an unquenchable desire to follow his course."

Here his own account of himself closes, and what we have to add must of course be deficient in that interest which attaches itself to all personal memoirs that are written with frankness and sincerity. The newly imbibed desire of an academical education, to which he alludes, was not transient. To prepare himself for its accomplishment, he laid aside as much of his earnings as he could spare, and applied himself, in the intervals of manual occupation, to the Latin and Greek languages. It was not long ere he thus qualified himself for beginning his course at the university. In 1793, at the age of eighteen, he matriculated in the Glasgow college, under Professor Richardson, and from that period went regularly through the successive classes in the university, up till the year 1797. During the summer recesses, he supported himself by teaching, at first as a private tutor; but latterly he took up a small public school in the village of Symington, in Ayrshire. It was his first wish to follow the clerical profession; but after he had attended two sessions at the Divinity Hall of Glasgow, he applied to the study of medicine; and in order to have every advantage towards acquiring a proficiency in that branch of knowledge, he removed to Edinburgh, which has been so long celebrated as a medical school. Here he remained until he had gone through the usual studies of the science. In 1799, he returned to Glasgow; and after an examination by the faculty of physicians and surgeons, he was found "a fit and capable person to exercise the arts of surgery and pharmacy." In the same year he set up as surgeon in the town of Paisley, and soon began to attain great popularity in his profession, and to reap the reward of his talents and perseverance. In a short time he had engrossed so much practice as to find it necessary to take in, as partner and as-

assistant, Mr James Muir, who had been his fellow-student at Edinburgh. This gentleman possessed considerable literary abilities, and was author of various pieces of a didactic character, which appeared in the periodicals of the day. Dr Watt, on the other hand, was chiefly attached to that department of human inquiry which comes under the denomination of experimental philosophy—particularly chemistry, to which science, for a considerable time, he devoted his leisure hours almost exclusively. Yet, with these differences of pursuits, they lived in harmony during a partnership of nearly ten years, each following his own course, and both holding the most respectable station of their profession in the place where they resided.

The period of Dr Watt's residence in Paisley was perhaps the busiest in his life. He enjoyed during it a better state of health than he ever did afterwards, and had, besides, all the ardour and enterprise of one newly entered into a sphere for which he had long panted. The number and variety of manuscripts which he left, sufficiently attest the persevering activity of his mind during this period. The most important, perhaps, of these was one in quarto, entitled "An Abstract of Philosophical Conjectures; or an Attempt to explain the Principal Phenomena of Light, Heat, and Cold, by a few simple and obvious Laws." This volume contains many curious and interesting experiments; but it is probable, that, since the date of its composition (1805), many new lights have been thrown on the subjects it embraces. The only work which he ventured to publish while at Paisley, amid the many he composed and contemplated, was one, entitled "Cases of Diabetes, Consumption, &c.; with Observations on the History and Treatment of Disease in general." This appeared in 1803, and excited considerable interest at the time among the learned of the profession.

Soon after the publication of this volume, he felt a desire to remove to another place, and aim at a higher line of practice than he had hitherto done. There was no place, however, which he had particularly fixed upon; and before coming to any decision on this point, he determined to make a tour through England, with the view of ascertaining whether that country might not afford an eligible spot. The journey would at the same time be favourable to his health, which was beginning to be impaired. In 1809, having furnished himself with letters of recommendation to persons eminent in his profession throughout England, he went to London by a circuitous route, embracing on his way most of the principal towns in the country. It does not appear, however, that he found

any situation there agreeable to his wishes ; for on his return home, after an absence of several months, he determined on settling in Glasgow ; and, accordingly, in the year 1810, as soon as matters could properly be arranged, he removed to that city.

Previously to this, he had received from the university of Aberdeen the title of Doctor in Medicine, and had been elected member of the Faculty of Physicians and Surgeons of Glasgow. In the same winter he began his lectures on the theory and practice of medicine, and thus at once placed himself in that station of life for which he was so eminently qualified.

His success in Glasgow was complete and immediate. As a physician, he suddenly acquired a most respectable and extensive practice ; and as a lecturer, his popularity was equally gratifying. The continental war, which was then raging, occasioned a great demand for surgeons, and increased the number of students much above the ordinary average. Dr Watt's lecture-room was numerously attended, and he spared no pains or expense that might conduce to the advantage of his pupils. His lectures were formed on the best models, and from the most extensive sources, and his manner of delivering them was easy and engaging. During the first course, he read them from manuscript ; but he afterwards abandoned that method for extemporaneous delivery, assisting his memory merely by brief memorandums of the chief heads of discourse. He used to say that this method, by keeping his mind in a state of activity, fatigued him less than the dull rehearsal of what lay before him. With a view to the advantage of his students, he formed a library of medical books, which was very complete and valuable, containing, besides all the popular works on medicine, many scarce and high-priced volumes. Of this library he published a catalogue in 1812, to which he appended "An Address to Medical Students on the best Method of Prosecuting their Studies."

The "Bibliotheca Britannica" may be said to have originated with the formation of this library. Besides the catalogue of it, which was printed in the usual form, having the works arranged under their respective authors in alphabetical order, he drew out an index of the various subjects which the volumes embraced, making references to the place which each held upon the shelf, and thus brought before his eye, at one view, all the books in his possession that treated on any particular point. The utility of this index to himself and his students, soon turned his mind to the consideration of one upon a more comprehensive scale, that would embrace all the medical works which had been printed in the British domi-

nions. This he immediately set about drawing out, and devoted much of his time to it. After he had nearly completed his object, he extended the original plan by introducing works on law, and latterly works on divinity and miscellaneous subjects. This more than tripled his labours, but it proportionably made them more useful. The extent of the design, however, was not yet completed. Hitherto all foreign publications had been excluded from it; and although a prospectus of the work had been published, containing very copious explanations and specimens which might be supposed to have determined its nature and bounds, he resolved, when it was on the eve of going to press, to make the work still further useful, by introducing the more popular and important of foreign authors and their productions; embracing at the same time the various continental editions of the classics. Thus was another mighty addition made to the original plan; and it is thus that many of the most splendid monuments of human intellect and industry originate in trifling or small beginnings.

In 1813, he published a "Treatise on the History, Nature, and Treatment of Chincough." He was led to investigate particularly this disease, by a severe visitation of it in his own family, in which four of his children were affected at the same time, the two eldest of whom died. The treatise contains not only the author's own observation and experience, but also that of the best medical writers on the subject. To the volume is subjoined "An Inquiry into the Relative Mortality of the principal Diseases of Children, and the Numbers who have died under Ten Years of Age, in Glasgow, during the last Thirty Years." In 1814, he issued, anonymously, a small volume, entitled "Rules of Life, with Reflections on the Manners and Dispositions of Mankind;" and which consisted of a great number of apophthegms and short sentences, many of them original, and the others selected from the best English writers.

About this time his health began rapidly to decline. From his youth he had been troubled with a stomachic disorder, which attacked him at times very severely, and kept him always under great restrictions in his diet and general regimen. The disease had gained ground with time, and perhaps was accelerated by the laborious life which he led. He nevertheless continued to struggle against it, maintained his usual good spirits, and went through the various arduous duties of his profession. His duties, indeed, had increased upon him. He had become a member of various literary and medical societies, of several of which he was president, and had been

elected physician to the Glasgow Royal Infirmary, and president of the faculty of physicians and surgeons.

It was not until the year 1817 that he totally discontinued his professional pursuits. Nor would, perhaps, his active spirit have so soon submitted to this resignation, had not another employment engaged his attention. He had by this time brought his great work, the "*Bibliotheca Britannica*," to a very considerable state of forwardness; had become interested in it, and anxious for its completion. He probably saw, that, from the state of his health, the duration of his life must be but limited, and was desirous, while yet some strength and vigour remained, to place the work in such a state that even his death would not prevent its publication. He retired, therefore, with his family, to a small country house, about two miles from Glasgow, and engaged several young men as amanuenses, and devoted himself exclusively to its compilation. In this literary seclusion, Dr Watt was for some time able to make great progress in his undertaking; but though freed from worldly interruptions, he had to combat with a disease which was every day becoming more formidable, and which at last obliged him to discontinue all personal labour. He still, however, continued to oversee and direct his amanuenses; and nothing could exceed the kind attention which he paid to their comforts, even when suffering under his fatal malady. In his own retirement, he practised every method which his knowledge or experience could suggest to stem the progress of the disease, but they were all unavailing. In the hope that travel and a sea-voyage might benefit him, he went in one of the Leith smacks to London, made a considerable tour through England, and returned more exhausted and emaciated than before. From that period until his death, he was scarcely out of bed, but underwent, with wonderful fortitude, an afflicting and uninterrupted illness of several months. He died upon the 12th of March 1819.

The whole plan of the great work of Dr Watt, the "*Bibliotheca Britannica*," is new; and few compilations, of similar magnitude and variety, ever presented, in a first edition, a more complete design and execution. It is divided into two parts; the first part containing an alphabetical list of authors, to the amount of above forty thousand, and under each a chronological list of his works, their various editions, sizes, price, and so on, and also of the papers he may have contributed to the more celebrated journals of art and science. This division differs little in its construction from that of a common catalogue, only that it is universal in its character, and in many instances gives short biographical notices of the au-

thor, and critical opinions of his works. It also gives most ample lists of the various editions of the Greek and Roman classics, &c., and, under the names of the early printers, lists of the various books which they printed. In the second part, all the titles of works recorded in the first part, and also anonymous works, are arranged alphabetically under their principal subjects. This part forms a minute index to the first, and upon it the chief claim of the "Bibliotheca" to novelty and value rests; for it lays before the reader, at a glance, a chronological list of all the works that have been published on any particular subject that he may wish to consult, with references to their respective authors, or with the publisher's name, if anonymous. While, in short, the first part forms a full and comprehensive catalogue of authors and their works, the second forms an equally complete and extensive Encyclopædia of all manner of subjects on which books have been written. The utility of such a work, to the student and author in particular, must be obvious; for, with the facility with which he can ascertain in a dictionary the meaning of a word, can he here ascertain all that has been written on any branch of human knowledge.

The printing of the "Bibliotheca" was completed in 1824, in four large quarto volumes. The first division or portion of it was printed in Glasgow, and the second in Edinburgh. Messrs Archibald Constable and Company, of Edinburgh, purchased the whole for about L.2000, giving bills to that amount; but before any of the bills were honoured, the house failed, and thus the family of Dr Watt was prevented from receiving any benefit from a work to which so many sacrifices had been made, and upon which all their hopes depended.*

HENRY PESTALOZZI.

THE history of every man whose life has been productive of good to society, deserves to be studied with attention; but where the individual who conferred that good was placed in unfavourable circumstances, and subjected himself to privations and hardships for its accomplishment, our interest in his history becomes naturally of a much deeper kind. Strongly impressed with the conviction that the spark of hope may be cherished, amid difficulties, in the breasts of the poor and

* For the whole of the above memoir, we are indebted to the Scottish Biographical Dictionary (Blackie and Son, Glasgow), in which it appeared for the first time.

industrious, by the memoirs of such men, we are never weary of presenting them to our readers; and such a man and philanthropist was Pestalozzi.

Pestalozzi was born in Zurich, the capital of the Swiss canton of that name, in the year 1746. His family, though resident in that city for several generations, were of Italian extraction, his ancestors having been of some distinction in Milan, whence they were expatriated on account of their attachment to the Protestant faith, in the troublous times of the Reformation. In their adopted country the family enjoyed comfort both in spiritual and worldly affairs, and had even risen to a considerable degree of consequence. But Pestalozzi's father seems not to have shared in this prosperity, as, at his decease, his widow was left with an only child in a state of great poverty. An ancient maid-servant, whose attachment seems to have increased with the fallen fortunes of the family, was entreated by the dying husband and father to watch over the beloved ones from whom he was taken away. Barbara, as she was called, executed most faithfully the charge entrusted to her, and, as he afterwards took pleasure in confessing, was in no small degree instrumental in instilling sentiments of independence and rectitude into the young mind of Pestalozzi. Barbara had, like most old and attached servants, high ideas of the former greatness of the race under whom she lived, and was in the habit of resorting to numberless contrivances to prevent their decayed condition from being exposed to the public gaze. But though Pestalozzi smiled in after years at the ingenious nature of some of Barbara's plans for this purpose, he remembered also with affectionate gratitude her endeavours to excite in him virtuous and noble feelings out of the same subject which was the source of her little weaknesses: "Never," she would say, "never has a Pestalozzi eaten the bread of private compassion since Zurich was a city. Submit to any privation rather than dishonour your family." Perhaps a slight tinge of haughtiness, occasionally observable in the deportment of Pestalozzi, may have been owing to these early instructions; but to their beneficial influence also, he himself attributed that ruling passion which distinguished him through life, and was the source of all his usefulness. This was an admiration of independence of character, and a desire to confer it on the poor, by elevating their minds to endurance where there could be no remedy, and by developing their faculties, so as to increase all their resources.

We are unable to trace the steps by which Pestalozzi was led to advocate and practise those improvements in education for which his name is now celebrated. Poor himself, but pos-

sessed of exhaustless benevolence and untiring ardour, he appears to have become deeply impressed with the great Christian maxim that all men are brethren, which he was not content, as the generality of men have been, with merely professing, but he resolved to act upon it in the way in which it was undoubtedly designed by its author to be acted on, and to make it a real and prominent feature of society. Satisfied, at the same time, that the best way to benefit the poor is to put them in the way of benefiting themselves, and that the ignorance of that class is the chief source of their misery, and the grand barrier between them and the sympathies of the more affluent, he resolved, as the most ready and obvious means of realising the Christian maxim, to apply himself to the task of bringing all to a level in point of intelligence.

While still very young, he engaged in an agricultural scheme, principally with a view to make himself acquainted with the habits and feelings of that class of his countrymen, to whose improvement his life was to be dedicated. If any emolument was derived from this scheme, it was soon applied to the grand object. He instituted a poor-school at Reuhoff, with which a manufactory was connected. The latter was for the purpose of developing one of his early theories, that learning is the privilege of leisure after work, and that no one has attained the right to indulge in speculative curiosity till he has contributed to his own support. The poor scholars were taught both while at work and afterwards. This may appear too close a system of application, but it must be taken into account that gymnastic sports formed an important part of Pestalozzi's plan. Want of funds, and an incapacity for attending to minute savings (a weakness in his character which we shall have occasion to notice afterwards), brought him into embarrassment, and ultimately broke up this his first establishment. Before this occurred, however, his struggles against ill fortune showed his great ardour in the cause. He divided his last morsel of daily bread with his scholars, and lived like a mendicant, that, as he said himself, he might teach mendicants to live like men. Fortunately for his fellow-creatures, the mind of Pestalozzi was not a common one, and the suppression of his young hopes only strengthened in the end his natural benevolence, and the cup of penury, which had been presented to his own lips, only increased his desire to sweeten the draught for others. He emerged from his struggles, with a love for the unprotected poor augmented by his own acquaintance with poverty.

For some years after this disappointment he lived in retirement, but not in idleness. His tale of Leonard and Gertrude

was composed at this period, and acquired immediately a popularity which has never decreased. Such, indeed, was the esteem in which it was held, that it was by no means uncommon for a pastor to assemble his flock and read to them the tale under the village linden-tree. The time which was devoted to the composition of stories meriting such attention as this, cannot be termed misspent; but to occupations of a still higher nature was the author destined. In 1798, he was invited by the local government of Unterwalden to establish a school at Stantz. This place had been ravaged by fire during the revolutionary wars, and was in a condition of great poverty and misery. Although the state furnished him with slender means, and he had little of his own, Pestalozzi did not hesitate to accept the call. Never was enterprise undertaken under less promising auspices. The children flocked to him, it is true, but more for food than for instruction; their bodies attenuated by want, and their minds corrupted by the habits of begging and stealing, to which their necessities had reduced them. Can any picture be more beautiful than that which describes the change effected by Pestalozzi? The description is his own: "My first task," says he, "was to gain the confidence of my pupils, and to attach them to me; this main point once attained, all the rest appeared to me easy. The deserted state in which I found myself, all painful as it was, and the absolute want of assistance, were precisely what contributed the most to the success of my enterprise. Cut off from the rest of mankind, I turned all my cares and all my affections to the children; to me they were indebted for all the relief they received. I partook alike of their pains and their pleasures; I was every where with them when they were well; and when they were sick, I was constantly at their bedside. We had the same nourishment, and I slept in the midst of them, and from my bed either prayed with them, or taught them something." With all the difficulties of his position, to which at one period sickness was added, Pestalozzi struggled for many months. "In 1799," continues Pestalozzi, "my school contained nearly eighty pupils, the greater part of whom announced good dispositions, and some even first-rate abilities. Study was to them quite a novelty, and they attached themselves to it with indefatigable zeal, as soon as they began to perceive their own progress. The very children who before had never had a book in their hands, applied from morning till night; and when I have asked them, after supper, 'My children, which would you rather do, go to bed, or learn a little longer?' they would generally reply, that they would rather learn. The impulse was given, and their development began to take place with a rapidity that

surpassed my most sanguine hopes. In a short time were seen above seventy children, taken almost all from a state of poverty, living together in peace and friendship, full of affection for one another, and with a cordiality that rarely exists among brothers and sisters in numerous families. I had never given them as yet direct lessons either in religion or morality; but when they were assembled around me, and when there was a dead silence among them, I said to them, 'When you behave thus, are you not more reasonable beings than when you make a riot?' And when they used to embrace me, and call me their father, I used to say, 'Yes, you are ready to call me father, and yet you do, behind my back, things which disoblige me; is this right?' Sometimes I would portray to them the picture of a peaceable and orderly family, who, having acquired easy circumstances by their labour and economy, found themselves capable of giving advice and assistance to their ignorant, unfortunate, and indigent fellow-creatures: then addressing myself to those in whom I had perceived the most lively disposition to benevolence, I would say, 'Should you not like to live like me, in the midst of the unfortunate, to direct them, and to make them useful to themselves and to society?' Then with tears in their eyes, and with the generous glow of sensibility in their little countenances, they would reply, 'Oh! yes, could we ever hope to attain to such a point.' When Altorf was reduced to ashes, I assembled them round me, and said to them, 'Altorf is destroyed, and perhaps at this moment there are more than a hundred poor children, without clothes to cover them, without a home, or a morsel to eat. Shall we petition the government to permit us to receive twenty of them amongst us?' Methinks I still see the eagerness with which they replied, 'Yes, oh! certainly, yes.' 'But,' replied I again, 'reflect well what you are about to ask; we have at present but very little money at our command, and it is very doubtful whether they will grant us any more in favour of these unfortunates. Perhaps, in order to maintain your existence, and carry on your instruction, it will be necessary to labour much more than you have ever yet done; perhaps it may be necessary to divide with these strangers your victuals and your clothes; do not say, then, you will receive them among you, if you are not sure you will be able to impose upon yourselves all these privations.' I gave to my objections all the force they were capable of; I repeated to them all I had said, to be sure that they perfectly understood me; still they persevered in their first resolution. 'Let them come,' said they; 'and if all you have stated come to pass, we will divide with them what we have.'"

In the school of Stantz he matured and brought into successful practice his peculiar ideas on the subject of education, but it was at Burgdorf, in the canton of Berne, to which the troubles of the times obliged him to remove, that he reaped the full measure of reputation to which his improvements entitled him. His system of instruction seems to be founded on three leading maxims. The first is, that the pleasures of knowledge and philosophy are both available to all classes, and reconcileable with the habits and hardships of the most hard-working labourer. This general truth guided his instruction of the poor. The second maxim is the same upon which the plans of Bell and Lancaster were based, the principle of *mutual* instruction among the pupils. The third rule is, that the child must first be taught to use its *senses* in the accurate observation of *things*, which is the basis of all knowledge of the external world. Besides these general rules, many minor ones were of course laid down for the conduct of different branches of education. It is unnecessary to dwell upon these, but we may give one example. The process of teaching a language, according to Pestalozzi, should be threefold. First, to develope (or to lead the pupil himself, if possible, to discover the existence of) the rule or principle to be acquired, from an example or fact exhibiting it. Secondly, to express the rule so discovered in a good form of words, with due attention to precision, brevity, and elegance, and then commit it to memory. Thirdly, to lead the pupil to search for as many examples as can be conveniently brought before his attention, whereby he becomes familiar with its use, and has it fixed upon his mind.

Dr Bell at Madras, Joseph Lancaster in England, and Pestalozzi in Switzerland, seem all three to have discovered and put in practice the plan of *mutual* instruction among their pupils, which is unquestionably the most important improvement any of the three made upon the old mode of teaching. A great sensation was excited in this country by the rival claims of the two Englishmen to originality, but the priority in point of time belongs to neither of them, but to the Swiss teacher, though that does not affect the pretensions of either to a new invention. If so much merit attaches to the systems of Bell and Lancaster, as is generally allowed to them in Britain, it will be evident, from the brief account given of Pestalozzi's method, that he fully deserved the fame and distinction he arrived at.

At Burgdorf, his academy attracted the attention of the Swiss government, and of men of eminence, who assisted Pestalozzi with their countenance and means. But, alas, political convulsions followed soon after, and once more blasted the pro-

spects of the philanthropist. His pupils were dispersed, and he was reduced to establish a poor-school in a town about five miles from Berne. Here, with the assistance of an excellent man, M. Fellenberg, he met with his wonted success in attracting pupils, and in bringing them to an extraordinary pitch of improvement. The field for his exertions, however, was not wide enough to please him, and he removed to a place called the Castle of Yverdon, where he instituted a large seminary for the education of the upper and middle classes of the community. The fame of the teacher and his system had now passed the boundaries of his native country, and young men from Germany and other quarters were placed under his charge. His method differed from that of Bell and Lancaster, in being of a patriarchal and domestic nature, while the English teachers kept more in view the principles of civil and political subordination. The plan of the Swiss was simpler, and its effect better. His pupils assembled round him for instruction, like children round the knees of a father, and they formed altogether one harmonious and happy family.

The religious education of his pupils was limited to the cultivation of pious feelings. He attempted to inculcate no particular doctrines, believing that the ministers of the respective Christian persuasions were the proper persons to act as guides to any particular mode of faith. The opinions on this subject of a man so wonderfully successful in making those he taught amiable and enlightened, ought to be viewed with respect; and we mention them here, because in this country the propriety of introducing religious questions into courses of education has been so often a source of variance.

Many establishments were formed during the continuance of Pestalozzi at Yverdon, upon the same model, with almost invariable success. But the parent institution fell to pieces, undermined by the improvidence of its founder. We mentioned his want of economy in trifling matters; and this failing or weakness, though happily it could not undo the good already done, put a period to his utility in his lifetime, and rendered all his labours and successes of no avail to himself. It is melancholy to have to record such a feature as this, in a life so truly meritorious; but it may serve as a valuable lesson, that by prudence alone is the reward of all the other virtues permanently secured. Pestalozzi's ill-regulated generosity and want of order, with an injudicious confidence in the unworthy, drove him from his noble establishment to an involuntary retirement, and removed him from the sphere of his utility and exertions, after the clouds which had darkened the prospects of his earlier years had been dispersed by his energy and talent, and quiet

seemed to be settling over the sunset of his days. This eminent teacher died in the spring of 1827, in his native country. Several schools have been formed in England upon his plan, and many in Europe and America, with distinguished success. The leading feature in the Pestalozzian plan of education, is also now to be found in some of the improved schools throughout the country. The teacher sits among his pupils, conversing with them on the subjects of their study, explaining the why and the wherefore in all matters of difficulty, and exhibiting before their eyes, and placing in their hands, specimens of tangible objects, both natural and artificial, which they are called on to make themselves acquainted with; after which, he cross-questions them on what has been shown or described, so as completely to avoid the chance of their learning merely by rote.

THOMAS BEWICK.

THIS ingenious individual was born on the 12th August 1753, at Cherry Burn, in the parish of Ovingham, and county of Northumberland, a district celebrated for its coal mines, as well as for producing several individuals who rose by their abilities from a humble to a distinguished sphere of life. The choice of a profession for young Bewick was determined by the skill in drawing which he very early evinced. Like most boys whose bias towards any pursuit is peculiarly strong, he early indicated the bent of his genius by sketching figures with chalk on the walls and doors of the houses of his native village—a practice to which Salvator Rosa, one of the most eminent Italian painters, was similarly addicted while a youth, and which in the same manner governed his future course of life. This boyish propensity—which by the way is any thing but exemplary—was the means of introducing Bewick to his future master, who, pleased with some of his rude sketches, sought him as an apprentice, a proposition which was forthwith assented to by his parents.

At the age of fourteen, young Bewick was thus bound apprentice to Mr Beilby of Newcastle, a respectable engraver, and one who took delight in instructing his pupils and encouraging their rising talents. Bewick pursued the occupation of engraver on copper for a few years, and might perhaps have continued to do so for life, had an accidental circumstance not occurred to direct his attention to engraving on wood, a branch

of art hitherto little cultivated. Dr Hutton, a celebrated mathematician, at that time a schoolmaster in Newcastle, was preparing his work on mensuration; and having applied to Mr Beilby to supply copper-plates of the mathematical figures, he was advised to employ wood-engravings or cuts instead. This was agreed to, and Mr Beilby entrusted the execution of them to his apprentice, Bewick. With such beauty and accuracy were they finished, that the young engraver was advised by his master to turn his chief attention to this long-neglected art; and the consequence was a succession of mathematical works illustrated with beautiful diagrams engraved on wood. These figures, consisting chiefly of lines, are not so difficult of execution as those in which shading and a variety of waving and blending lines are necessary to give effect to the perspective, and present a faithful image of the object to be represented. But the application of the art was not long to be limited to the illustration of mathematical works. Bewick applied himself to pictorial delineation, and in which in a short time he attained very considerable proficiency. Here we may pause to describe, in a few words, the peculiar character and value of wood-cutting.

In copper-engraving the lines or incisions are made in the surface of the plate, and it is from these lines, filled with a thick kind of ink, and by the aid of a press, that the representation is produced on paper. As only one copper-plate can be printed from at a time, and as the process of printing is both tedious and expensive, this description of engraving is ill adapted for the illustration of works where great numbers of copies and lowness of price are required. Both these requisites are secured by wood-engraving. The wood, which is of the fine box-tree, is prepared in blocks of the precise depth of printing types; and the parts to be printed from being left in relief (not sunk as in copper), these blocks may be readily fixed up among the types or pages of matter, and printed from along with them, without any additional expense whatever, except the cost of the cuts. The prodigious convenience and cheapness of wood illustrations over copper-plate embellishments, may hence be easily conceived; it is true that wood-engravings cannot be made to equal those of copper or steel in point of beauty and softness, but for all purposes in which utility and not mere elegance is required, wood-cuts are found to be every way suitable. In the present day, wood-engraving has been carried to a high state of perfection, and is of extensive utility for the illustration of works on the physical sciences and sheets of popular instruction. Much credit is therefore due to the ingenious and persevering Bewick, who revived this important

branch of art in England, and gave it that impetus which has since carried it triumphantly forward.

It is to be regretted that in many instances, young persons, from the impulse of vanity or ambition, heedlessly attach themselves to professions connected with the fine arts, in which their natural ability is unable to advance them beyond a humble mediocrity. This is a most fatal step, and ought to be sedulously avoided by all whom friendly advisers consider deficient of those abilities calculated to carry them to an eminent station in the profession to which their wishes may incline them. In most branches of human industry, perseverance leads to skill, and ultimately to fortune; but to excel in the fine arts, such as sculpture, painting, and pictorial engraving, there must be a strong natural aptitude or genius, otherwise the labour will be in vain, or lead to no beneficial results. Fortunately, Bewick possessed this rare attainment in an eminent degree; and to render such a qualification valuable both to himself and to society, he added the virtues of temperance and industry, without which, genius, however brilliant, has little chance of ever attaining its object. After his apprenticeship had expired, Bewick spent a short time in the metropolis, and also paid a visit to Scotland, after which he returned to Newcastle, and became a partner in his master's business. His brother John, who was seven years his junior, became their joint apprentice, and he soon evinced talents and skill equal if not superior to those of his eldest brother. Unfortunately for the arts and for society, of which he was an ornament, this promising individual was cut off in the thirty-fifth year of his age. Both Thomas and John Bewick possessed a fine taste in appreciating the beauty of natural objects, and it was in the delineation of embellishments of this description on wood that both excelled. The publication of an edition of Gay's *Fables* afforded the first opportunity for the Bewicks displaying their talents in this higher branch of wood-engraving. The *Fables* of Gay were published in 1779; and in 1784, the appearance of a new edition of the "Select *Fables*," with an entire new set of cuts by the Bewicks, spread far and wide their reputation, and placed them above competition in the art.

The attractions which the animal kingdom presented to Mr Bewick, continued through life, and led him to become a true delineator of nature. He loved to roam among the fields and bye-ways, to watch the various attitudes and appearances of animals, both wild and domesticated; thus enriching his stores of knowledge to be elaborated in the course of his professional avocations. He, likewise, neglected no opportu-

nity of making himself acquainted with those collections of foreign animals which occasionally visited Newcastle in itinerant caravans, and this led to the publication of his work entitled "The History of Quadrupeds," which, after being carefully prepared, made its appearance in the year 1790. This production was well received by the public at its first appearance, and it has ever since been held in the highest estimation. The pictorial embellishments exhibit every excellence which engravings of animals ought to possess—boldness of design, variety and exactness of attitude, correctness of drawing, and discrimination of general character. A spirit of life and animation pervades every figure, and thus a lively idea of each animal is conveyed. Short descriptions accompanied the figures. The success of this production, as well as that of several other works in general literature which followed it, induced the publication, in 1797, of the first volume of "The History of British Birds, comprising the Land Birds," the letter-press being furnished by Mr Beilby. Before the publication of the second volume, on "British Water Birds," a separation of interests took place, so that its compilation and completion devolved on Mr Bewick alone, with the assistance of a literary friend. The usual excellences of the artist were displayed in this beautiful and valuable work. The drawings are minutely accurate, and express the natural delicacy of feather, down, and foliage, in a peculiarly happy manner. A great and unexpected charm belonged to both the history of Quadrupeds and Birds—this was the profusion of vignettes and tail pieces with which the volumes are adorned. Many of these happy little embellishments are connected with the manners and habits of the animals near which they are placed; others, again, merely exhibit the fancies and dry humour of the artist, his particular notions of men and things, partaking both of the droll and pathetic; as, for instance, a ragged, half-starved sheep, picking at a besom—a troop of Savoyards, weary and foot-sore, tugging a poor bear to the next fair—a broken-down soldier, trudging, with stern patience, through the slant rain storm—a poor travelling woman looking wistfully at a mutilated milestone—a blind old beggar, whose faithful dog stops short, with warning whine, on the broken plank that should have crossed the swollen brook—youngsters flying their kite—a disappointed sportsman, who, by shooting a magpie, has lost a woodcock—a horse vainly endeavouring to reach the water—a bull roaring near a style which he cannot surmount—a poor mendicant attacked by the rich man's mastiff—and so forth, all delineatory of scenes true to nature, and calculated to excite pleasing emotions in the minds of the reader. It

would be here out of place to particularise the various productions—Poems, Fables, and works on subjects of Natural History—which occupied this ingenious and industrious man during the latter years of his life, and in which he was assisted by a succession of pupils, some of whom have done him great honour, and carried the art of wood-cutting to a state of perfection which he did not imagine it was capable of arriving.

In his mode of living, Bewick was plain and regular. He practised early rising, indulged in rustic and athletic sports, and accustomed himself to hardships of various kinds. During the severest winter he kept the windows of his bedroom open, and it was no uncommon occurrence for him to find the snow drifted upon his bed-clothes. With a frame originally robust and vigorous, and the employment of various means to secure health, it is not surprising that he enjoyed it in high perfection. The warmth of his attachments, particularly to the various branches of his own family, was very great. During his apprenticeship, his regular custom was to visit his parents once a-week. They lived at Cherry Burn, which is fourteen miles distant from Newcastle; and when the river Tyne happened to be so swollen as to prevent his getting across, he used to shout over to his family, and after obtaining the required information relative to their health, return home. With respect to his social habits, it is related of him that he did not mix a great deal with the world, for he not only possessed a singular and most independent mind, but in his habits he was naturally most persevering and industrious, qualities of character incompatible with the frivolities of society. At his bench he worked and whistled with light-hearted joyous industry, from morn till night, and was a perfect specimen of an old Englishman. During the latter period of his life, he was visited by many persons of taste and literary eminence, who delighted in his conversation, and admired his character and abilities. He died, as he had lived, an upright and truly honest man; and breathed his last, after a short illness, in the bosom of his family, whose society he preferred to every other enjoyment. His death took place at his residence near the Windmill Hills, Gateshead, on Saturday, the 8th of November 1828, in the 76th year of his age.

LOTT CARY.

THE general inferiority of the dark natives of Africa in moral and intellectual character, is too generally acknowledged to require comment. It is not, however, so generally known, that the Negro variety of the human species occasionally produces individuals who, in mental capacity, and goodness of disposition, rival the most enlightened of Europeans. Such an individual was Richard Bannaker, of Maryland, who lived during the latter part of the last century. This man was altogether self-taught; and having directed his attention to the study of astronomy, his calculations were so thorough and exact as to excite the approbation of such men as Pitt, Fox, Wilberforce, and other eminent men, and an almanac which he composed was produced in the House of Commons, as an argument in favour of the mental cultivation of coloured people, and of their liberation from their wretched thralldom.

Lott Cary, the object of the present sketch is, however, a still more remarkable example of Negro intellect and worth. He was born a slave in Charles city county, about thirty miles below Richmond, Virginia, on the estate of Mr W. A. Christian. He was the only child of parents who were themselves slaves, but, it appears, of a pious turn of mind; and though he had no instruction from books, it may be supposed that the admonitions of his father and mother may have laid the foundations of his future usefulness. In the year 1804, the young slave was sent to Richmond, and hired out by the year as a common labourer, at a warehouse in the place. While in this employment, he happened to hear a sermon, which implanted in his uncultivated mind a strong desire to be able to read, chiefly with a view of becoming acquainted with the nature of the events recorded in the New Testament. Having somehow procured a copy of this work, he commenced learning his letters, by trying to read the chapter he had heard illustrated in the sermon; and by dint of perseverance, and the kind assistance of young gentlemen who called at the warehouse, he was in a little time able to read, which gave him great satisfaction. This acquisition immediately created in him a desire to be able to write: an accomplishment he soon also mastered. He now became more useful to his employers, by being able to check and superintend the shipping of tobacco; and having, in the course of time, saved the sum of 850 dollars, or nearly L.170 sterling, he purchased his own freedom and that of two children, left him on the death of his first wife. "Of the real

value of his services while in this employment (says the author of the American publication from which these facts are extracted), it has been remarked, that no one but a dealer in tobacco can form an idea. Notwithstanding the hundreds of hogsheads which were committed to his charge, he could produce any one the moment it was called for; and the shipments were made with a promptness and correctness such as no person, white or coloured, has equalled in the same situation. The last year in which he remained in the warehouse, his salary was 800 dollars. For his ability in his work, he was highly esteemed, and frequently rewarded, by the merchant with a five-dollar bank note. He was also allowed to sell, for his own benefit, many small parcels of damaged tobacco. It was by saving the little sums obtained in this way, with the aid of subscriptions by the merchants, to whose interests he had been attentive, that he was enabled to purchase the freedom of his family. When the colonists were fitted out for Africa, he was enabled to bear a considerable part of his own expenses. He also purchased a house and some land in Richmond. It is said, that while employed at the warehouse, he often devoted his leisure time to reading, and that a gentleman, on one occasion, taking up a book, which he had left for a few moments, found it to be Smith's *Wealth of Nations*."

As early as 1815, this intelligent emancipated slave began to feel special interest in the cause of African missions, and contributed, probably, more than any other person, in giving origin and character to the African Missionary Society, established during that year in Richmond. His benevolence was practical; and whenever and wherever good objects were to be effected, he was ready to lend his aid. Mr Cary was among the earliest emigrants to Africa. Here he saw before him a wide and interesting field, demanding various and powerful talents, and the most devoted piety. His intellectual ability, firmness of purpose, unbending integrity, correct judgment, and disinterested benevolence, soon placed him in a conspicuous station, and gave him wide and commanding influence. Though naturally diffident and retiring, his worth was too evident to allow of his remaining in obscurity. The difficulties which were encountered in founding a settlement at Cape Montserado were appalling, and it was proposed on one occasion that the emigrants should remove to Sierra Leone, whose climate is of the most destructive character; but the resolution of Lott Cary to remain was not shaken, and his decision had no small effect towards inducing others to imitate his example. In the event, they suffered severely. More than eight hundred natives attacked them in November 1822, but were repulsed; and a few

weeks later, a body of fifteen hundred attacked them again at daybreak ; several of the colonists were killed and wounded ; but with no more than thirty-seven effective men and boys, and the aid of a small piece of artillery, they again achieved a victory over the natives. In these scenes the intrepid Cary necessarily bore a conspicuous part. In one of his letters, he remarks, that, like the Jews in rebuilding their city, they had to toil with their arms beside them, and rest upon their arms every night ; but he declared after this, in the most emphatic terms, that "there never had been an hour or a minute, no, not even when the balls were flying round his head, when he could wish himself back in America again."

The peculiar exposure of the early emigrants, the scantiness of their supplies, and the want of adequate medical attentions, subjected them to severe and complicated sufferings. To relieve, if possible, these sufferings, Mr Cary obtained all the information in his power concerning the diseases of the climate; and the proper remedies. He made liberal sacrifices of his property in behalf of the poor and distressed, and devoted his time almost exclusively to the relief of the destitute, the sick, and the afflicted. His services as a physician to the colony were invaluable, and were, for a long time, rendered without hope of reward. But amid his multiplied cares and efforts for the colony, he never forgot or neglected to promote the joint cause of civilisation and Christianity among the natives.

In 1806, Mr Cary was elected vice-agent of the colony, and he discharged the duties of that important office till his death, which occurred in 1828, in the most melancholy manner. One evening, while he and several others were engaged in making cartridges in the old agency house at Monrovia—the chief town in the settlement—in preparation to defend the rights of the colony against a slave-trader, a candle appears to have accidentally overturned, which caught some loose powder, and instantaneously reached the entire ammunition, producing an explosion which resulted in the death of eight persons. Mr Cary survived for two days.—Such was the unfortunate death of this active coloured apostle of civilisation on the coast of Africa, where his memory will continue long to be cherished. The career which he pursued, and the intelligence which marked his character, might prove, to the satisfaction of all impartial thinkers, that the race of blacks is not destitute of moral worth and capacity, and that their culture would in time produce an abundant harvest of the best principles which dignify human nature.

THOMAS JENKINS.

THE facts about to be related are of so extraordinary a nature, that, if they had happened at a place distant from our scene of publication, or at a time remote from the present, we should have despaired of procuring credence for them, and, perhaps, on that account, abandoned the idea of giving them publicity. It happens, however, that, both in respect of time and place, they are so readily liable to be denied, if found incorrect, that we can bring them forward with the greatest confidence.

Thomas Jenkins was the son of an African king, and bore externally all the usual features of the Negro. His father reigned over a considerable tract of country to the east of, and, we believe, including Little Cape Mount, a part of the wide coast of Guinea, which used to be much resorted to by British vessels for the purchase of slaves. The Negro sovereign, whom the British sailors knew by the name of King Cock-eye, from a personal peculiarity, having observed what a superiority civilisation and learning gave to the Europeans over the Africans in their traffic, resolved to send his eldest son to Britain, in order that he might acquire all the advantages of knowledge. He accordingly bargained with a Captain Swanstone, a native of Hawick in Scotland, who traded to the coast for ivory, gold dust, &c., that the child should be taken by him to his own country, and returned in a few years fully educated, for which he was to receive a certain consideration in the productions of Africa. The lad recollected a little of the scene which took place on his being handed over to Swanstone. His father, an old man, came with his mother, who was much younger, and a number of sable courtiers, to a place on the side of a green eminence near the coast, and there, amidst the tears of the latter parent, he was formally consigned to the care of the British trader, who pledged himself to return his tender charge, some years afterwards, endowed with as much learning as he might be found capable of receiving. The lad was, accordingly, conveyed on shipboard, where the fancy of the master conferred upon him the name of Thomas Jenkins.

Swanstone brought his protegee to Hawick, and was about to take the proper means for fulfilling his bargain, when, unfortunately, he was cut off from this life. No provision having been made for such a contingency, Tom was thrown upon the wide world, not only without the means of obtaining a Christian education, but destitute of every thing that was necessary to supply still more pressing wants. Mr Swanstone died in a

room in the Tower Inn at Hawick, where Tom very faithfully attended him, though almost starved by the cold of a Scottish winter. After his guardian had expired, he was in a state of the greatest distress from cold, till the worthy landlady, Mrs Brown, brought him down to her huge kitchen fire, where, alone, of all parts of the house, could he find a climate agreeable to his nerves. Tom was ever after very grateful to Mrs Brown for her kindness. After he had remained for some time at the inn, a farmer in Teviot-head, who was the nearest surviving relation of his guardian, agreed to take charge of him, and, accordingly, he was removed to the house of that individual, where he soon made himself useful in rocking the cradle, looking after the pigs and poultry, and other such humble duties. When he left the inn, he understood hardly a word of English ; but here he speedily acquired the common dialect of the district, with all its peculiarities of accent and intonation. He lived in Mr L——'s family for several years, in the course of which he was successively advanced to the offices of cowherd and driver of peats to Hawick for sale on his master's account, which latter duty he discharged very satisfactorily. After he had become a stout boy, Mr Laidlaw of Falnash took a fancy for him, and readily prevailed upon his former protector to yield him into his charge. "Black Tom," as he was called, became, at Falnash, a sort of Jack-of-all-trades. He acted as cowherd at one time, and stable-boy at another : in short, he could turn his hand to any sort of job. It was his especial duty to go upon all errands to Hawick, for which a retentive memory well qualified him. He afterwards became a regular farm-servant to Mr Laidlaw, and it was while acting in this capacity that he first discovered a taste for learning. How Tom acquired his first instructions is not known. The boy probably cherished a notion of duty upon this subject, and was anxious to fulfil, as far as his unfortunate circumstances would permit, the designs of his parent. He probably picked up a few crumbs of elementary literature at the table of Mr Laidlaw's children, or interested the servant lasses to give him what knowledge they could. In the course of a brief space, Mrs Laidlaw was surprised to find that Tom began to have a strange appetency for candle-ends. Every scrap of wick and tallow that he fell in with was secreted and taken away to his loft above the stable, and very dismal suspicions began to be entertained respecting the use he put them to. Curiosity soon incited the people about the farm to watch his proceedings after he had retired to his den ; and it was then discovered, to the astonishment of all, that the poor lad was engaged, with a book and a slate, in drawing rude imita-

mons of the letters of the alphabet. It was found that he also kept an old fiddle beside him, which cost the poor horses below many an uneasy night. On the discovery of his literary taste, Mr Laidlaw put him to an evening school, kept by a neighbouring rustic, at which he made rapid progress—such, indeed, as to excite astonishment all over the country; for no one had ever dreamt that there was so much as a possibility of his becoming a scholar. By and bye, though daily occupied with his drudgery as a farm-servant, he began *to instruct himself in Latin and Greek*. A boy friend, who in advanced life communicated to us most of the facts we are narrating, lent him several books necessary in these studies; and Mr and Mrs Laidlaw did all in their power to favour his wishes, though the distance of a classical academy was a sufficient bar, if there had been no other, to prevent their giving him the means or opportunity of regular instruction. In speaking of the kind treatment which he had received from these worthy individuals, his heart has often been observed to swell, and the tear to start into his honest dark eye. Besides acquainting himself tolerably well with Latin and Greek, he initiated himself in the study of mathematics.

A great era in Tom's life was his possessing himself of a Greek dictionary. Having learned that there was to be a sale of books at Hawick, he proceeded thither, in company with our informant. Tom possessed twelve shillings, saved out of his wages, and his companion vowed that if more should be required for the purchase of any particular book, he should not fail to back him in the competition—so far as eighteenpence would warrant, that being the amount of his own little stock. Tom at once pitched upon the lexicon as the grand necessary of his education, and accordingly he began to bid for it. All present stared with wonder when they saw a Negro, clad in the grey cast-off surtout of a private soldier, competing for a book which could only be useful to a student at a considerably advanced stage. A gentleman of the name of Moncrieff, who knew Tom's companion, beckoned him forward, and inquired with eager curiosity into the seeming mystery. When it was explained, and Mr Moncrieff learned that thirteen and sixpence was the utmost extent of their joint stocks, he told his young friend to bid as far beyond that sum as he chose, and he would be answerable for the deficiency. Tom had now bidden as far as he could go, and he was turning away in despair, when his young friend, in the very nick of time, threw himself into the competition. "What, what do you mean?" said the poor Negro, in great agitation; "you know we cannot pay both that and the duty." His friend, however, did not regard his

remonstrances, and immediately he had the satisfaction of placing the precious volume in the hands which were so eager to possess it—only a shilling or so being required from Mr Moncrieff. Tom carried off his prize in triumph, and, it is needless to say, made the best use of it.

It may now be asked—what was the personal character of this extraordinary specimen of African intellect? We answer at once—the best possible. Tom was a mild unassuming creature, free from every kind of vice, and possessing a kindliness of manner which made him the favourite of all who knew him. In fact, he was one of the most popular characters in the whole district of Upper Teviotdale. His employers respected him for the faithful and zealous manner in which he discharged his humble duties, and every body was interested in his singular efforts to obtain knowledge. Having retained no trace of his native language, he resembled, in every respect except his skin, an ordinary peasant of the south of Scotland: only he was much more learned than the most of them, and spent his time somewhat more abstractedly. His mind was deeply impressed with the truths of the Christian faith, and he was a regular attender upon every kind of religious ordinances. Altogether, Tom was a person of the most worthy and respectable properties, and, even without considering his meritorious struggles for knowledge, would have been beloved and esteemed wherever he was known.

When Tom was about twenty years of age, a vacancy occurred in the school of Teviot-head, which was an appendage to the parish school for the use of the scattered inhabitants of a very wild pastoral territory. A committee of the Presbytery of Jedburgh was appointed to sit on a particular day at Hawick, in order to examine the candidates for this humble charge, and to report the result to their constituents. Among three or four competitors appeared the black farm-servant of Falnash, with a heap of books under his arm, and the soldier's greatcoat upon his back. The committee was surprised; but they could not refuse to read his testimonials of character, and put him through the usual forms of examination. More than this—his exhibition was so decidedly superior to the rest, that they could not avoid reporting him as the best fitted for the situation. Tom retired triumphant from the field, enjoying the delightful reflection that now he would be placed in a situation much more agreeable to him than any other he had ever known, and where he would enjoy infinitely better opportunities of acquiring instruction.

For a time, this prospect was dashed. On the report coming before the Presbytery, a majority of the members were

alarmed at the strange idea of placing a Negro and born Pagan in such a situation, and poor Tom was accordingly voted out of all the benefits of the competition. The poor fellow appeared to suffer dreadfully from this sentence, which made him feel keenly the misfortune of his skin, and the awkwardness of his situation in the world. But, fortunately, the people most interested in the matter felt as indignant at the treatment which he had received, as he could possibly feel depressed. The heritors, among whom the late Duke of Buccleuch was the chief, took up the case so warmly, that it was immediately resolved to set up Tom in opposition to the teacher appointed by the Presbytery, and to give him an exact duplicate of the salary which they already paid to that person. An old blacksmith's shop was hastily fitted up for his reception, and Tom was immediately installed in office, with the universal approbation of both parents and children. It followed as a matter of course that the other school was completely deserted, and Tom, who had come to this country to learn, soon found himself fully engaged in teaching, and in the receipt of an income more than adequate to his wants. To the gratification of all his friends, and some little confusion of face to the Presbytery, he turned out an excellent teacher. He had a way of communicating knowledge that proved in the highest degree successful, and, as he contrived to carry on the usual exercises without the use of any severities, he was as much beloved by his pupils as he was respected by those who employed him. Five days every week he spent in the school. On the Saturdays, he was accustomed to walk to Hawick (eight miles going and as much returning) in order to make an exhibition of what he had himself acquired during the week, to the master of the academy there; thus keeping up, it will be observed, his own gradual advance in knowledge. It further shows his untiring zeal, that he always returned to Hawick next day—of course, an equal extent of travel—in order to attend the church.

After he had conducted the school for one or two years, finding himself in possession of about twenty pounds, he bethought him of spending a winter at college. The esteem in which he was held rendered it an easy matter to demit his duties to an assistant for the winter; and, this matter being settled, he waited upon his good friend Mr Moncrieff (the gentleman who had enabled him to get the lexicon, and who had since done him many other good offices), in order to consult about other matters concerning the step he was about to take. Mr Moncrieff, though accustomed to regard Tom as a wonder, was, nevertheless, truly surprised at this new project. He

asked, above all things, the amount of his stock of cash. On being told that twenty pounds was all, and, furthermore, that Tom contemplated attending the Latin, Greek, and mathematical classes, he informed him that this would never do : the money would hardly pay his fees. Tom was much disconcerted at this ; but his generous friend soon relieved him, by placing in his hands an order upon a merchant in Edinburgh, for whatever might be further required to support him for a winter at college.

Tom now pursued his way to Edinburgh with his twenty pounds. On applying to the professor of Humanity [Latin] for a ticket to his class, that gentleman looked at him for a moment in silent wonder, and asked if he had acquired any rudimental knowledge of the language. Mr Jenkins, as he ought now to be called, said modestly that he had studied Latin for a considerable time, and was anxious to complete his acquaintance with it. Mr P——, finding that he only spoke the truth, presented the applicant with a ticket, for which he generously refused to take the usual fee. Of the other two professors to whom he applied, both stared as much as the former, and only one took the fee. He was thus enabled to spend the winter in a most valuable course of instruction, without requiring to trench much upon Mr Moncrieff's generous order ; and next spring he returned to Teviot-head, and resumed his professional duties.

The end of this strange history is hardly such as could have been wished. It is obvious, we think, that Jenkins should have been returned by some benevolent society to his native country, where he might have been expected to do wonders in civilising and instructing his father's, or his own subjects. Unfortunately, about ten years ago, a gentleman of the neighbourhood, animated by the best intentions, recommended him to the Christian Knowledge Society, as a proper person to be a missionary among the colonial slaves ; and he was induced to go out as a teacher to the Mauritius—a scene entirely unworthy of his exertions. There he is now (1835) living in the receipt of an excellent income, and the enjoyment of all the popular respect which so amiable a character might be expected to incite.

SIR THOMAS LAWRENCE.

THIS distinguished painter was born at Bristol in 1709, and was the youngest of a family of sixteen children. His father, who had been bred an attorney, and was afterwards an officer of excise, at the time his son Thomas was born kept an inn in Bristol; but his business here being unsuccessful, he removed, in 1772, to Devizes, in Wiltshire, where he became the landlord of the Black Bear. It appears that this removal was by no means advantageous to Thomas's father, who was a man of singular manners, and was fonder of spouting poetry to his guests than attending steadily to the affairs of his household. His mother, we are told, was a person of a very different and more respectable character. While in this house at the town of Devizes, the wonderful genius of little Thomas began to be manifested. He could recite verses to the admiration of all who heard him, and, by a natural faculty, began to use a pencil, and take likenesses—an accomplishment which induced his parents to present him to all strangers of note who visited their house. A striking instance of this precocity of talent occurred when he was but five years of age, and is thus mentioned:—Lord and Lady Kenyon happening to stop for a day at the Black Bear, on their way to Bath, Mr Lawrence, the landlord, entered their apartment, and began to expatiate on the genius of his boy, who, “although only in his fifth year, could recite them poetry, or speeches, or take their likenesses, whichever they chose.” Lady Kenyon was, in the first instance, somewhat annoyed by the interruption; but there presently capered into the room, straddling upon a stick, the most lovely and spirited child she had ever beheld. His beautiful face was flushed with exercise, and neither she nor her husband felt inclined to stop his gambols. As soon as the boy could be induced to stand still, Lady Kenyon took him into her arms, and asked him if he could take the likeness of that gentleman, pointing to the future Lord Chief Justice. The child, looking with an impatient earnestness at Lord Kenyon, exclaimed, “Yes, that I can, and very like too.” Whilst materials were sent for, the child resumed his play; but when all was prepared, throwing his little legs from over his stick, he was lifted on the table, and seated in an arm chair, from which height he took Lord Kenyon's likeness, with a rapidity, a spirit, and a correctness truly astonishing. That done, he was impatient to be gone; but his lordship, coaxing him, asked if he could take the likeness of the lady. The boy exclaimed, “Yes, that

I can, if she will only turn her side to me, for her face is not straight." This produced a burst of laughter; for Lady Kenyon, by an accident, had a slight curvature of the nose. The child took the profile. Twenty-five years after, an old friend of Lady Kenyon saw this portrait, and could distinctly trace a resemblance to what her ladyship had been at the period when it was taken.

At the age of six years, little Lawrence was sent to school, where he remained only two years; and this was all the education he ever received, except a few lessons afterwards in Latin and French from a dissenting clergyman. From his sixth to his tenth year, he continued to take likenesses occasionally, and to be exhibited as a prodigy by his partial father, who seems to have in some measure lived on the profits of his son's ingenious exertions. At the age of ten, the young artist commenced, of his own accord, to execute original compositions of a higher class. He painted several scripture pieces; and his fame in this branch of the arts also spreading, he was invited by gentlemen to visit their galleries of paintings from the eminent masters.

The erratic efforts of the rising artist did not save his father from ruin. Old Lawrence failed in his business at Devizes, and removed to Bath, where he placed his son a pupil with Mr Hoare, a crayon-painter of taste and fancy. Under this excellent master he acquired those qualities of grace, delicacy, and spirit, which afterwards distinguished his productions. While at Bath, and only thirteen years of age, he made a drawing of the Transfiguration, which having sent to the exhibition of the Society of Arts, was rewarded by the society conferring upon him the great silver palette, and five guineas, in approbation of his abilities. During his residence at this place of fashionable resort, he was taken by his father on excursions to Oxford, Salisbury, and other towns, where he obtained considerable occupation for his pencil. It is said he generally received four sitters every day, giving to each half an hour, and half an hour longer from memory. When about sixteen years of age, he was strongly inclined to make the stage his profession, and he actually performed at the Bath theatre; but from this line of life he was happily diverted, and turned to better pursuits. He remained at Bath about six years; and during the whole of this period, young as he was, he was the sole support of his father and the other members of the family. At length, his father, either thinking that his labours might be made still more profitable in a wider field, or perhaps prevailed upon by the remonstrances of his son, determined to remove to London.

. It was in the early part of the year 1787, when in his eighteenth year, that young Lawrence was brought to the metropolis, to commence that career which terminated so triumphantly. He was now in the midst of institutions established for affording instructions in his art, and this was a most fortunate circumstance for him at this crisis in his life. It appears, that, on the arrival of the family in London, his father immediately hired a handsome suite of apartments in Leicester Square, in the immediate neighbourhood of the rooms of Sir Joshua Reynolds, to whom he was anxious his son should be introduced. On applying to this great painter for this purpose, an interview was appointed; and young Lawrence, with the sensibility inseparable from worth and talents, was taken to the painting-room of this distinguished head of the English school of art. Sir Joshua was forcibly struck by the beauty, fine figure, and graceful manner of the lad, and received him with an attention and a benignity that dissipated his apprehensions, and restored him to self-possession. The performance he brought with him was examined, and partially approved of; and having given the young painter several valuable directions, kindly told him he was welcome whenever he chose to call. Lawrence listened to his remarks with deference, and felt grateful for the attention bestowed upon him. Seeing now the folly of his father in wishing to set him up as a master of the art of painting, he very soon removed from Leicester Square to less splendid lodgings in Tavistock Street, Covent Garden, and procured himself to be admitted a student at the Royal Academy.

. From this period may be dated the rapid rise of Mr Lawrence into notice in the higher circles of society in the metropolis. Every year he attained a greater proficiency in his art; but though commissions for portraits to a considerable extent flowed in upon him, his pecuniary affairs were far from affluent. The drafts upon his purse, in behalf of his parents, were absorbing; but although this burden long held him down, he was never heard to murmur or complain. In 1791, he was elected an associate of the Royal Academy; in the following year, on the death of his former patron Sir Joshua Reynolds, he was appointed his successor in the offices of painter to his majesty and to the Dilettanti Society. From this time his reputation grew steadily, till he came to be generally considered the first portrait painter of the age. Every year he produced portraits of eminent characters, and his works included pictures of most of the crowned heads in Europe. In April 1815, the Prince Regent was pleased to confer the honour of knighthood on Mr Lawrence. At the request of the prince, he was induced to

proceed to Aix-la-Chapelle, to take likenesses of the most distinguished statesmen who had there met for diplomatic purposes ; having executed this mission, to proceed to Vienna, and from thence to Rome, where he had an opportunity of contemplating the great masterpieces of ancient art. During the whole of Sir Thomas's residence on the Continent, he was entertained in the palaces of the various sovereigns with marked distinction ; and the propriety and elegance of his deportment made an impression highly favourable to his character as an English artist and gentleman. He returned to England in 1820, but before his arrival, on the death of Mr West, he was elected without opposition to succeed him as President of the Royal Academy. This distinguished office he continued to hold till his lamented death. This event took place in a sudden manner on the 7th of January 1830, and was ascertained to have been caused by an extensive and complicated ossification of the heart—a disease which has prematurely cut off many men of genius.

It would be useless here to say any thing of the character of this eminent individual as a painter. His works, and engravings from them, are every where to be met with, and their superiority may be discovered even by the most ignorant, from their extraordinary delicacy of touch and gracefulness. He was one of the few eminent English painters who attained a proficiency in their profession before visiting Italy, or without studying the old masters—a circumstance attributable to his wonderful native genius and good taste. Although he never had to contend with those difficulties at the outset which have frequently beset the early career of men who arrived at distinction, his biography presents us with the instructive example of a man of genius successfully struggling to support a father's family, and who was neither intoxicated with applause nor abandoned to that recklessness of conduct which is too commonly found the concomitant of genius, especially when not strengthened by a good education in youth. But we will remember, that although Sir Thomas's father was a *downdraught*, his mother was a woman of considerable intelligence and of many lady-like qualifications, as well as matronly virtues ; and to her he no doubt owed much of that steadiness of principle which carried him so successfully through life.

THOMAS TELFORD.

THOMAS TELFORD was born in the year 1757, in the parish of Westerkirk, in the pastoral vale of Eskdale, a district in the county of Dumfries, in Scotland. His parents occupied a station in the humble walks of life, which, however, they filled with becoming respectability. The outset in life of their son Thomas corresponded to their situation in society, and was strikingly humble and obscure in comparison with its close. He began the world as a working stone-mason in his native parish, and for a long time was only remarkable for the neatness with which he cut the letters upon those frail sepulchral memorials which "teach the rustic moralist to die." His occupation, fortunately, afforded a greater number of leisure hours than what are usually allowed by such laborious employments, and these young Telford turned to the utmost advantage in his power. Having previously acquired the elements of learning, he spent all his spare time in poring over such volumes as fell within his reach, with no better light in general than what was afforded by the cottage fire. Under these circumstances, the powers of his mind took a direction not uncommon among rustic youths; he became a noted rhymster in the homely style of Ramsay and Fergusson, and, while still a very young man, contributed verses to Ruddiman's Weekly Magazine, under the unpretending signature of "Eskdale Tam." In one of these compositions, which was addressed to Burns, he sketched his own character, and hinted his own ultimate fate—

Nor pass the tentie curious lad,
Who o'er the ingle hangs his head,
And begs of neighbours books to read;
For hence arise
Thy country's sons, who far are spread,
Baith bold and wise.

Though Mr Telford afterwards abandoned the thriftless trade of versifying, he is said to have retained through life a strong "frater-feeling" for the corps, which he showed in a particular manner on the death of Burns, in exertions for the benefit of his family.

Having completed his apprenticeship as a stone-mason in his native place, he repaired to Edinburgh, where he found employment, and continued, with unremitting application, to study the principles of architecture, agreeably to the rules of science.

Here he remained until the year 1782, when, having made a considerable proficiency, he left the Scottish capital, and went to London under the patronage of Sir William Pulteney (originally Johnstone) and the family of Pasley, who were natives of the parish of Westerkirk.

Telford now found himself in a scene which presented scope for the efforts of his talents and industry. Fortunately he did not long remain unnoticed or unemployed. His progress was not rapid, but it was steady, and always advancing; and every opportunity of displaying his taste, science, and genius, extended his fame, and paved the way to new enterprises and acquisitions. The first public employment in which he was engaged was that of superintending some works belonging to government in Portsmouth dockyard. The duties of this undertaking were discharged with so much fidelity and care as to give complete satisfaction to the commissioners, and to ensure the future exercise of his talents and services. Hence, in 1787, he was appointed surveyor of the public works in the rich and extensive county of Salop, and this situation he retained till his death.

A detail of the steps by which Mr Telford subsequently placed himself at the head of the profession of engineering, would most likely only tire our readers. It is allowed on all hands that his elevation was owing solely to his consummate ability and persevering industry, unless we are to allow a share in the process to the singular candour and integrity which marked every step in his career. His works are so numerous all over the island, that there is hardly a county in England, Wales, or Scotland, in which they may not be pointed out. The Menai and Conway bridges, the Caledonian canal, the St Katharine's docks, the Holyhead roads and bridges, the Highland roads and bridges, the Chirke and Pontcysulte aqueducts, the canals in Salop, and great works in that county, are some of the traits of his genius which occur to us, and which will immortalise the name of Thomas Telford.

Nor was the British empire alone benefited by Mr Telford's genius. In the year 1808, he was employed by the Swedish government to survey the ground, and lay out an inland navigation through the central parts of that kingdom. The design of this undertaking was to connect the great fresh-water lakes, and to form a direct communication by water between the North Sea and the Baltic. This gigantic undertaking he fully accomplished, with the assistance of experienced British workmen.

Mr Telford's fame as a civil engineer has been principally spread in Great Britain by his great work, the Dublin road

from London to Holyhead, including the Menai and Conway bridges. The Menai bridge, one of the greatest wonders of art in England, is, unquestionably, the most imperishable monument of his capacity for extensive undertakings. This bridge is constructed over the small strait of the sea which intervenes betwixt the mainland of North Wales and the island of Anglesea, and carries the road which proceeds onward to Holyhead. Before its erection, the communication was carried on by means of ferry-boats, and was therefore subject to delays and even dangers. The bridge is at a point near the town of Bangor, from near which its appearance is strikingly grand. It is built partly of stone and partly of iron, on the suspension principle, and consists of seven stone arches, exceeding in magnitude every work of the kind in the world. They connect the land with the two main piers, which rise 53 feet above the level of the road, over the top of which the chains are suspended, each chain being 1714 feet from the fastenings in the rock. The first three-masted vessel passed under the bridge in 1826. Her topmasts were nearly as high as a frigate; but they cleared 12 feet and a half below the centre of the roadway. The suspending power of the chains was calculated at 2016 tons; the total weight of each chain, 121 tons. This stupendous undertaking occasioned Mr Telford more intense thought than any other of his works: he told a friend (Dr James Cleland) that his state of anxiety for a short time previous to the opening of the bridge was so extreme, that he had but little sound sleep, and that a much longer continuance of that condition of mind must have undermined his health. Not that he had any reason to doubt the strength and stability of every part of the structure, for he had employed all the precautions that he could imagine useful, as suggested by his own experience and consideration, or by the zeal and talents of his very able and faithful assistants; yet the bare possibility that some weak point might have escaped his and their vigilance in a work so new, kept the whole structure constantly passing in review before his mind's eye, to examine if he could discover a point that did not contribute its share to the perfection of the whole. In this, as in all his great works, he employed, as sub-engineers, men capable of appreciating and acting on his ideas; but he was no rigid stickler for his own plans, for he most readily acquiesced in the suggestions of his assistants when reasonable, and thus identified them with the success of the work. In ascertaining the strength of the materials for the Menai bridge, he employed men of the highest rank for scientific character and attainments.

The Caledonian canal is another of Mr Telford's splendid

works, in constructing every part of which, though prodigious difficulties were to be surmounted, he was successful. But even this great work does not redound so much to his credit as the roads throughout the same district. That from Inverness to the county of Sutherland, and through Caithness, made not only, so far as respects its construction, but its direction, under Mr Telford's orders, is superior, in point of line and smoothness, to any part of the road of equal continuous length between London and Inverness. This is a remarkable fact, which, from the great difficulties he had to overcome in passing through a rugged, hilly, and mountainous district, incontrovertibly establishes his great skill in the engineering department, as well as in the construction of great public communications.

The genius of this distinguished engineer, as has been stated, was not confined to his profession. Dr Currie says, in his *Life of Burns*, "A great number of manuscript poems were found among the papers of Burns, addressed to him by admirers of his genius, from different parts of Britain, as well as from Ireland and America. Among these was a poetical epistle from Shrewsbury, of superior merit. It is written in the dialect of Scotland (of which country Mr Telford is a native), and in the versification generally employed by our poet himself. Its object is to recommend to him other subjects of a serious nature, similar to that of the 'Cottar's Saturday Night,' and the reader will find that the advice is happily enforced by example. It would have given the editor pleasure to have inserted the whole of this poem, which he hopes will one day see the light; he is happy to have obtained, in the meantime, his friend Mr Telford's permission to insert the following extracts."—Then come the permitted extracts, from which the subjoined, written at Shrewsbury, is selected :—

Pursue, O Burns, thy happy style,
 "Those manner-painting strains," that while
 They bear me northward mony a mile,
 Recall the days
 When tender joys, with pleasing smile,
 Blest my young ways.

I see my fond companions rise ;
 I join the happy village joys ;
 I see our green hills touch the skies,
 And through the wood
 I hear the river's rushing noise—
 Its roaring flood.

No distant Swiss with warmer glow
 E'er heard his native music flow,
 Nor could his wishes stronger grow
 Than still have mine,
 When up this rural mount I go
 With songs of thine.

O happy bard ! thy gen'rous flame
 Was given to raise thy country's fame ;
 For this thy charming numbers came—
 Thy matchless lays :
 Then sing, and save her virtuous name
 To latest days.

Mr Telford was not more remarkable for his great professional abilities than for his sterling worth in private life. His easiness of access, and the playfulness of his disposition, even to the close of life, endeared him to a numerous circle of friends, including all the most distinguished men of his time. He was the patron of merit in others, wherever it was to be found ; and he was the means of raising many deserving individuals from obscurity to situations where their talents were seen and soon appreciated. Up to the last period of his life, he was fond of young men and of their company, provided they delighted in learning. His punctuality was universal, a very rare quality in men of genius. In the course of his busy life he taught himself Latin, French, and German. He understood algebra well, but thought that it led too much to abstraction, and too little to practice. Mathematical investigation he also held rather cheaply, and always, when practicable, resorted to experiment to determine the relative value of any plans on which it was his business to decide. He delighted in employing the vast in nature to contribute to the accommodation of man ; yet he did not despise minutiae—a point too seldom attended to by projectors.

For some years before his death, he gradually retired from professional employment, and he latterly amused his leisure hours by writing a detailed account of the principal undertakings which he had planned and lived to see executed. The immediate cause of Mr Telford's death was a repetition of severe bilious attacks, to which he had for some years been subject, and which at length proved fatal. His life, prolonged by temperance and cheerfulness, at length drew to a close, and he expired at his house in Abingdon Street, Westminster, September 2, 1834. He died a bachelor. His remains were deposited in Westminster Abbey, next to those of the late distinguished geographer, Major Rennel.

was dismantled, Lieutenant Clapperton returned to England, to be placed, like many others, on half pay, and ultimately retired to his grandfather's native burgh of Lochmaben. There he remained till 1820, amusing himself with rural sports, when he removed to Edinburgh, and shortly after became acquainted with the amiable and lamented Dr Oudney. It was at Dr Oudney's suggestion that he first turned his thoughts to African discovery; and, through all the varieties of untoward fortune, suffering and sorrow, sickness and death, he clung to his friend with the constancy of a brother.

We have now arrived at that period of Clapperton's life in which he first became introduced to public notice, or, rather, when an opportunity first presented itself for the development of his active mind. On the death of Mr Ritchie, at Mourzouk, and the return of Captain Lyon, Earl Bathurst, then Secretary of State for the Colonial Department, relying on the strong assurances of his Majesty's consul at Tripoli, that the road from thence to Bornou was open and safe, resolved that a second mission should be sent to explore the state of this unhappy quarter of the globe, which annually sends forth so many thousands of its population into hopeless slavery. Dr Oudney, who was a naval surgeon, was appointed, on strong recommendations from Edinburgh, to proceed in the capacity of consul to Bornou, being allowed to take with him, as a friend and companion, Captain, then Lieutenant Clapperton. About that time, the late Colonel, then Lieutenant Denham, having volunteered his services in an attempt to pass from Tripoli to Timbuctoo, and it being intended that researches should be made from Bornou, as the fixed residence of the consul, to the east and to the west, Lord Bathurst added his name to the expedition. At a very early stage of the journey, Dr Oudney caught a severe cold, which fell on his lungs, and he died, January 12, 1824. Colonel Denham and Captain Clapperton returned to England; and their narratives were published, and have since gone through several editions. The portions of the expedition related by Captain Clapperton are a journey from Kouka to Murmur, from Murmur to Kano, and from Kano to Sackatoo, the capital of the Felatah empire.

Clapperton's narrative of his journey through the new and untrodden country of Soudan could not fail of being interesting, and the unaffected and manly style in which it is written is highly creditable to him. We will select a few of those particulars which will serve to illustrate his personal character.

After having passed through Kano, Captain Clapperton proceeded towards Sackatoo. On his road he was met by an escort of 150 horsemen, with drums and trumpets, which Bello,

the sultan, had sent to conduct him to his capital. Our traveller was now received at every town and village with flourishing of horns and trumpets, as the representative of the King of England.

On receiving the presents in the name of the King of England, the sultan examined them with great attention, and then exclaimed, "Every thing is wonderful, but you are the greatest curiosity of all!" and then added, "what can I give that is most acceptable to the King of England?" "I replied," says Captain Clapperton, "the most acceptable service you can render to the King of England, is to co-operate with his Majesty in putting a stop to the slave-trade on the coast." "What!" said he, "have you no slaves in England?" "No: whenever a slave sets his foot in England, he is from that moment free." "What do you then do for servants?" "We hire them for a stated period, and give them regular wages; nor is any person in England allowed to strike another; and the very soldiers are fed, clothed, and paid by government." "God is great," he exclaimed; "you are a beautiful people." He also appeared anxious to establish a friendly connexion with England, and in answer to an inquiry after our newspapers, when told that many thousands were printed every morning, he exclaimed, "God is great; you are a wonderful people!"

It is quite obvious that Captain Clapperton, in the various interviews which he had with Sultan Bello, succeeded in strongly inclining him to a friendly communication with England; for at every interview the subject was pressed—thus:—

"The sultan sent for me in the afternoon. I was taken to a part of his residence I had never before seen: it was a handsome apartment, within a square tower, the ceiling of which was a dome, supported by eight ornamented arches, with a bright plate of brass in its centre. Between the arches and the outer wall of the tower, the dome was encircled by a neat balustrade in front of a gallery which led into an upper suite of rooms. We had a long conversation about Europe: he spoke of the ancient Moorish kingdom in Spain, and appeared well pleased when I told him that we were in possession of Gibraltar. He asked me to send him from England some Arabic books, and a map of the world, and, in recompense, promised his protection to as many of our learned men as chose to visit his dominions. He also spoke of the gold and silver to be obtained in the hills of Jacoba and Addmowa; but I assured him that we were less anxious about gold mines than the establishment of commerce, and the extension of science. He now gave me a map of the country, and, after explaining it to me, he resumed the old theme of applying, by letter, to the King

of England for the residence of a consul and a physician at Sackatoo."

When the traveller waited upon him to take leave, the sultan treated him in the most friendly manner. "After repeating the Fatha," says Clapperton, "and praying for my safe arrival in England and speedy return to Sackatoo, he affectionately bade me farewell." Of Bello's opinion of Captain Clapperton, the following passage in the letter of the chieftain, addressed to George IV., and brought home by Clapperton himself, affords a marked proof:—"Your Majesty's servant, Bayes-Abd-Allah (Clapperton's travelling name) came to us, and we found him a very intelligent and wise man; representing, in every respect, your greatness, wisdom, dignity, clemency, and penetration." It should be added, that Captain Clapperton always took care to impress upon the Africans that he should be despised, on his return to England, if in any instance he acted deceitfully and treacherously, he being a "servant of the King of England."

On the 4th of May 1824, Captain Clapperton left Sackatoo on his return to Kouka, which he reached July 8, and where he was joined a few days afterwards by Colonel Denham, who did not know him, so altered was he by fatigue and illness. "On my arrival again at Kouka," says Denham, "I found that Captain Clapperton, with a small kafilah, had returned from Soudan. It was nearly eight months since we had separated, and although it was mid-day, I went immediately to the hut where he was lodged; but so satisfied was I that the sun-burnt sickly person that lay extended on the floor, rolled in a dark blue shirt, was not my companion, that I was about to leave the place, when he convinced me of my error by calling me by my name: the alteration was certainly in him most striking."

The travellers now prepared for their return to their native country. Their journey over the desert was exceedingly harassing. Having at length reached Tripoli, they there embarked for Leghorn. From Leghorn they crossed the Alps, and arrived in England on the 1st of June 1825.

Captain Clapperton was not allowed much time for repose. An answer being prepared to the letter from Sultan Bello to the King of England, it was, with a letter to El Kanemy, the Sheikh of Bornou, entrusted to Captain Clapperton, who, with Captain Pearce of the navy, Dr Morrison, and Mr Dickson, were conveyed in his Majesty's ship *Brazen* to the coast of Africa. The first three were landed at Badagry, in the Bight of Benin, on the 28th of November 1825; Mr Dickson, at his own request, having previously been put on shore at Whydah.

The King of Badagry readily undertook to afford to the travellers protection and assistance as far as his influence extended—namely, to a place called Jannah, the frontier town of the kingdom of Hio or Eyeo, which was found to be in lat. $6^{\circ} 56'$ N., and in the same meridian as Lagos. A great part of this journey was performed on foot, along narrow paths leading through deep forests: they reached this spot on the 18th of December.

From Jannah to Katunga, the capital of Youriba, was described as a journey that would require thirty-three days. The passage of the low swampy forest produced the usual pestilential effects on some of the party; and on the 27th of December, Captain Pearce, after a few days' illness, died. He was an excellent officer, but of a delicate habit, and, in the opinion of his friends, not calculated to bear the heat and fatigue to which he would necessarily be exposed in the course of an expedition of this kind; but all remonstrances were in vain, and he determined to make the attempt. Dr Morrison also falling sick, was advised by Captain Clapperton to return to the coast, to which he readily assented; and Mr Houtson, a merchant, who had voluntarily undertaken to accompany the mission as far as Katunga, returned with him. They had proceeded no farther, however, than Jannah, when Morrison became alarmingly ill, and died in the course of the day.

Mr Houtson, having decently interred his companion, rejoined Captain Clapperton. They now proceeded across a mountainous and beautifully romantic country, which continued so for many days; and beyond this range, the surface became gradually more uniform, but still undulated with hill and dale, and in an excellent state of cultivation. Towns and villages were constantly occurring; the former generally surrounded with mud walls, and ditches, and many of them containing from 10,000 to 12,000 inhabitants; the people everywhere civil and obliging, and the head men receiving them with the utmost kindness and hospitality.

On the 26th of April, Mr James, a merchant residing on the coast, wrote from Whydah, that he had received authentic information of the safe arrival of Clapperton at the capital of his old friend in the Felatah country. Here ended all information respecting the traveller; and two whole years had elapsed without the least intimation respecting Captain Clapperton, when, sometime in February 1828, his servant, Richard Lander, accompanied by a black man of the name of Pascoe, made their appearance at Badagry, having been nine months on their journey from Sackateo. On the 24th of April, Lander arrived at Portsmouth, in the Esk sloop of war. From

him it was ascertained that Captain Clapperton died on the 13th April 1827, at Sackatoo, where he had been detained for five months, in consequence of the Sultan Bello not permitting him to proceed, on account of the war between him and the Sheikh of Bornou. He had waited there hoping to obtain permission to proceed to Timbuctoo, and lived in a small circular clay hut belonging to the sultan's brother, the size of which dwelling was about fifty yards each way. He was attacked with dysentery, and latterly fell away rapidly, and became much emaciated.

Lander states, that two days before he died, he requested that he might be shaved, as he was too weak to sit up. On its completion, he asked for a looking-glass, and remarked he was "doing better," and should certainly "get over it." The morning on which he died he breathed loud, and became restless, and shortly afterwards expired in his servant's arms. He was buried by him at Jungali, a small village five miles south-east of Sackatoo, and was followed to his grave by his faithful attendant and five slaves. The corpse was conveyed by a camel, and the place of interment marked by a small square house of clay, erected by Lander, who then obtained the sultan's permission to return home. He accordingly journeyed to Badagry, which occupied him seven months, and was taken off the coast by Captain Laing, of the merchant brig *Maria* of London, in January. 1828.

Captain Clapperton was, in the best sense of the phrase, "a fine fellow;" a term well calculated to express a general idea of his whole character. In person he was about five feet eleven inches in height, with a high and commanding forehead (the index of a noble mind), and a set of features full of pleasing and intelligent expression. Previous to his death, at the age of thirty-eight, his fine athletic form was almost reduced to a skeleton. He is represented to have been a man of frank and generous disposition, and to have possessed a happy mode of adapting himself to circumstances—it will be owned, a valuable endowment for one whose short life was one continued scene of enterprise and hair-breadth escapes.

His conduct towards the natives even endeared him to them as if he had been one of their caste. He assumed the gravity of the Tauricks, their manners, and even their dress, and so completely identified himself with them, that they frequently expressed their belief that he would ultimately become a convert to Mahomedanism. We can readily imagine how companionable these qualities must have rendered him, especially in such a desert as that between Mourzouk and Bornou, a dreary waste, in which "towns, villages, wandering tribes,

and kafilas, or caravans, sometimes occur to break the solitude of that dismal belt, which seems to stretch across Northern Africa, and on many parts of which not a living creature, even an insect, enlivens the scene. Still, however, the halting-places at the wells, and the wadeys or valleys, afford an endless source of amusement to the traveller, in witnessing the manners, and listening to the conversation, of the various tribes of natives, who, by their singing and dancing, their story-telling, their quarrelling and fighting, make him forget, for a time, the ennui and fatigue of the day's journey."

Fortunately, the whole of Captain Clapperton's journals were saved, and subsequently published. By the travels and investigations of Denham, Oudney, and Clapperton, a considerable amount of new information was ascertained regarding the river Niger and the kingdoms on its banks; but as they did not trace it to the ocean, the place of its embouchure was left to be discovered, a few years afterwards, by the brothers Lander, one of whom, as above noticed, had accompanied Clapperton in his unfortunate expedition.

HUGO GROTIUS.

AMONG the number of learned men whom Holland has produced, one of the most eminent was Hugo Groot, or Grotius (his name being Latinised into that form), who flourished in the early part of the seventeenth century, and obtained a wide reputation for his deep and extensive scholarship, as well as for his sufferings in the cause of religious and civil liberty.

Grotius was a native of the town of Delft, where he was born in the year 1583. While yet a child, he acquired fame for his extraordinary attainments. At eight years of age he composed Latin elegiac verses; and at fourteen, he maintained public theses or dissertations in mathematics, law, and philosophy. In 1598, he accompanied Barneveldt, the ambassador from the Dutch States, to Paris, where he gained the approbation of the reigning French monarch, the celebrated Henri Quatre, or Henry the Fourth, by his genius and demeanour, and was every where admired as a prodigy. After his return to Holland, he adopted the profession of a lawyer, and while no more than seventeen years of age, pleaded his first cause at the bar, in a manner that gave him prodigious reputation.

Some time afterwards he was appointed to the office of advocate-general.

In the year 1608, Grotius married Mary Reigersberg, whose father had been burgomaster of Veer. The wife was worthy of the husband, and her value was duly appreciated. Through many changes of fortune they lived together in the utmost harmony and mutual confidence. It will be immediately seen how the devoted affection of the wife was tried in endeavours to soothe the misfortunes of the persecuted husband. Grotius lived in an evil time, when society was unhappily distracted by furious religious and political disputes. Mankind were mad with theological controversy, and Christian charity, amidst the tumult of parties, was entirely forgotten. Grotius was an Arminian and a republican, and his professional pursuits soon involved him in a strife, which it was next to impossible to avoid. Barneveldt, his early patron, who possessed similar sentiments, was seized and brought to trial, and Grotius supported him by his pen and his influence. But his efforts were useless. In 1619, Barneveldt, on the charge of rebellion, was brought to the scaffold and beheaded, and his friend Grotius was sentenced to imprisonment for life in the fortress of Louvestein, in South Holland. After this very rigorous and unfair proceeding, his estates were confiscated. Previously to his trial, he had a dangerous sickness, during which his anxious wife could not by any means obtain access to him; but after he was sentenced, she presented a petition, earnestly entreating to be his fellow prisoner, and her prayer was granted. In one of his Latin poems he speaks of her with deep feeling, and compares her presence to a sunbeam amid the gloom of his prison. The States offered to do something for his support; but with becoming pride she answered that she could maintain him out of her own fortune. She indulged in no useless regrets, but employed all her energies to make him happy. Literature added its powerful charm to these domestic consolations; and he who has a good wife, and is surrounded by good books, may defy the world. Accordingly, we find Grotius pursuing his studies with cheerful contentment, in the fortress where he was condemned to remain during life. But his faithful wife was resolved to procure his freedom. Those who trusted her with him must have had small knowledge of the ingenuity and activity of woman's affection. Her mind never for a moment lost sight of this favourite project, and every circumstance that might favour it was watched with intense interest.

Grotius had been permitted to borrow books of his friends in a neighbouring town; and when they had been perused, they were sent back in a chest, which conveyed his clothes to

the washerwoman. At first his guards had been very particular to search the chest, but never finding any thing to excite suspicion, they grew careless. Upon this negligence, Mrs Grotius founded hopes of having her husband conveyed away in the chest. Holes were bored in it to admit the air, and she persuaded him to try how long he could remain in such a cramped and confined situation. The commandant of the fortress was absent, when she took occasion to inform his wife that she wished to send away a large load of books, because the prisoner was destroying his health by too much study.

At the appointed time Grotius entered the chest, and was with difficulty carried down a ladder by two soldiers. Finding it very heavy, one of them said, jestingly, "there must be an Arminian in it." She answered very coolly that there were indeed some Arminian books in it. The soldier thought proper to inform the commandant's wife of the extraordinary weight of the chest; but she replied that it was filled with a load of books, which Mrs Grotius had asked her permission to send away, on account of the health of her husband.

A maid, who was in the secret, accompanied the chest to the house of one of her master's friends. Grotius came out uninjured; and, dressed like a mason, with trowel in hand, he proceeded through the market-place to a boat, which conveyed him to Brabant, whence he took a carriage to Antwerp. This fortunate escape was effected in March 1621. His courageous partner managed to keep up a belief that he was very ill in his bed, until she was convinced that he was entirely beyond the power of his enemies.

When she acknowledged what she had done, the commandant was in a furious passion. He detained her in close custody, and treated her very rigorously, until a petition which she addressed to the States-General procured her liberation. Some dastardly spirits voted for her perpetual imprisonment; but the better feelings of human nature prevailed, and the wife was universally applauded for her ingenuity, fortitude, and constant affection.

Grotius found an asylum in France, where he was reunited to his family. A residence in Paris is expensive, and for some time he struggled with pecuniary embarrassment. The king of France at last settled a pension upon him. He continued to write, and his glory spread throughout Europe. Cardinal Richelieu wished to engage him wholly in the interests of France; and not being able to obtain an abject compliance with all his schemes, he made him feel the full bitterness of dependence. Thus situated, he was extremely anxious to re-

turn to his native country; and in 1627 his wife went into Holland to consult with his friends on the expediency of such a step.

He was unable to obtain any public permission to return; but relying on a recent change in the government, he, by his wife's advice, boldly appeared at Rotterdam. His enemies were still on the alert; they could not forgive the man who refused to apologise, and whose able vindication of himself had thrown disgrace upon them. Many private persons interested themselves for him; but the magistrates offered rewards to whoever would apprehend him. Such was the treatment this illustrious scholar met from a country which owes one of its proudest distinctions to his fame!

He left Holland, and resided at Hamburgh two years; at which place he was induced to enter the service of Christina, queen of Sweden, who appointed him her ambassador to the court of France. After a residence of ten years, during which he continued to increase his reputation as an author, he grew tired of a situation, which circumstances rendered difficult and embarrassing. At his request he was recalled. He visited Holland, on his way to Sweden, and at last met with distinguished honour from his ungrateful country. After delivering his papers to Christina, he prepared to return to Lubeck. He was driven back by a storm; and being impatient, set out in an open waggon, exposed to wind and rain. This imprudence occasioned his death. He was compelled to stop at Rostock, where he died suddenly, August 28, 1645, in the sixty-third year of his age. His beloved wife, and four out of six of his children, survived him.

Grotius was the author of a number of works in different departments of learning, and his writings are believed to have had a decisive influence in the diffusion of an enlightened and liberal manner of thinking in affairs of science. Much of his learning being merely philological, or referring to a knowledge of the Greek and Latin tongues, is now justly held to have been of little value, and his productions in the belles-lettres are therefore in a great measure forgotten. His fame in modern times rests principally on his great work on natural and national law, written in Latin, and entitled *De Jure Belli et Pacis*—the Law of War and Peace, by which the science of jurisprudence has been ably promoted.

SIR WILLIAM HERSCHEL.

THE science of astronomy, which, from the time of Copernicus, had been gradually improving through the laborious exertions of Tycho Brahe, Kepler, Huygens, Newton, Halley, Delisle, Lalande, and other eminent observers of the starry firmament, was considerably advanced by the discoveries of Herschel, whose biography now comes under our notice.

William Herschel was born at Hanover on the 15th of November 1738. He was the second of four sons, all of whom were brought up to their father's profession, which was that of a musician. Having at an early age shown a peculiar taste for intellectual pursuits, his father provided him with a tutor, who instructed him in the rudiments of logic, ethics, and metaphysics, in which abstract studies he made considerable progress. Owing, however, to the circumscribed means of his parents, and certain untoward circumstances, these intellectual pursuits were soon interrupted, and at the age of fourteen he was placed in the band of the Hanoverian regiment of guards, a detachment of which he accompanied to England about the year 1757 or 1759. His father came with him to England, but after the lapse of a few months he returned home, leaving his son, in conformity with his own wish, to try his fortune in Great Britain—the adopted home of many an ingenious foreigner. How or when he left the regimental band in which he had been engaged, we are not informed. After struggling with innumerable difficulties, and no doubt embarrassed by his comparative ignorance of the English tongue, he had the good fortune to attract the notice of the Earl of Darlington, who engaged him to superintend and instruct a military band at the time forming for the Durham militia. After fulfilling this engagement, he passed several years in Yorkshire, in the capacity of teacher of music. He gave lessons to pupils in the principal towns, and officiated as leader in oratorios or concerts of sacred music—a kind of employment in which the Germans are eminently skilled, from their love of musical performances. Herschel, however, while thus engaged in earning an honourable livelihood, did not allow his professional pursuits to engross all his thoughts. He sedulously devoted his leisure hours in improving his knowledge of the English and Italian languages, and in instructing himself in Latin, as well as a little Greek. At this period he probably looked to these attainments principally with a view to the advantage he might derive from them in the prosecution of his professional studies; and it was no doubt with this view also that he afterwards

applied himself to the perusal of Dr Robert Smith's "Treatise on Harmonics"—one of the most profound works on the science of music which then existed in the English language. But the acquaintance he formed with this work was destined ere long to change altogether the character of his pursuits. He soon found that it was necessary to make himself a mathematician before he could make much progress in following Dr Smith's demonstrations. He now, therefore, turned with his characteristic alacrity and resolution to the new study to which his attention was thus directed; and it was not long before he became so attached to it, that almost all the other pursuits of his leisure hours were laid aside for its sake.

Through the interest and good offices of a Mr Bates, to whom the merits of Herschel had become known, he was, about the close of 1765, appointed to the situation of church organist at Halifax. Next year having gone, with his elder brother, to fulfil a short engagement at Bath, he gave so much satisfaction by his performances, that he was appointed organist in the Octagon Chapel of that city, upon which he went to reside there. The place which he now held was one of some value; and from the opportunities which he enjoyed, besides, of adding to its emoluments by engagements at the rooms, the theatre, and private concerts, as well as by taking pupils, he had the certain prospect of deriving a good income from his profession, if he had made that his only or his chief object. This accession of employment did not by any means abate his propensity to study for mental improvement. Frequently, after the fatigue of twelve or fourteen hours occupied in musical performances, he sought relaxation, as he considered it, in extending his knowledge of the pure and mixed mathematics. In this manner he attained a competent knowledge of geometry, and found himself in a condition to proceed to the study of the different branches of physical science which depend upon the mathematics. Among the first of these latter that attracted his attention were the kindred departments of astronomy and optics. Some discoveries, about this time made in astronomy, awakened his curiosity, and to this science he now directed his investigations, at his intervals of leisure. Being anxious to observe some of those wonders in the planetary system of which he had read, he borrowed from a neighbour a two-foot Gregorian telescope, which delighted him so much that he forthwith commissioned one of larger dimensions from London. The price of such an instrument, he was vexed to find, exceeded both his calculations and his means; but though chagrined, he was not discouraged; he immediately resolved to attempt with his own hand the construction of a

telescope; equally powerful with that which he was unable to purchase; and in this, after repeated disappointments, which served only to stimulate his exertions, he finally succeeded.

Herschel was now on the path in which his genius was calculated to shine. In the year 1774, he had the inexpressible pleasure of beholding the planet Saturn through a five-feet Newtonian reflector made by his own hands. This was the beginning of a long and brilliant course of triumphs in the same walk of art, and also in that of astronomical discovery. Herschel now became so much more ardently attached to his philosophical pursuits, that, regardless of the sacrifice of emolument he was making, he began gradually to limit his professional engagements and the number of his pupils. Meanwhile, he continued to employ his leisure in the fabrication of still more powerful instruments than the one he had first constructed; and in no long time he produced telescopes of seven, ten, and even twenty feet focal distance. In fashioning the mirrors for these instruments, his perseverance was indefatigable. For his seven-feet reflector, it is asserted that he actually finished and made trial of no fewer than two hundred mirrors before he found one that satisfied him. When he sat down to prepare a mirror, his practice was to work at it for twelve or fourteen hours, without quitting his occupation for a moment. He would not even take his hand from what he was about, to help himself to food; and the little that he ate on such occasions was put into his mouth by his sister. He gave the mirror its proper shape, more by a certain natural tact than by rule; and when his hand was once in, as the phrase is, he was afraid that the perfection of the finish might be impaired by the least intermission of his labours.

It was on the 13th of March 1781, that Herschel made the discovery to which he owes, perhaps, most of his popular reputation. He had been engaged for nearly a year and a half in making a regular survey of the heavens, when, on the evening of the day that has been mentioned, having turned his telescope, an excellent seven-feet reflector, of his own constructing, to a particular part of the sky, he observed among the other stars one which seemed to shine with a more steady radiance than those around it: and, on account of that, and some other peculiarities in its appearance, which excited his suspicions, he determined to observe it more narrowly. On reverting to it after some hours, he was a good deal surprised to find that it had perceptibly changed its place—a fact which, the next day, became still more indisputable. At first he was somewhat in doubt whether or not it was the same star which he had seen on these different occasions; but after continuing

his observations for a few days longer, all uncertainty upon that head vanished. He now communicated what he had observed to the astronomer-royal, Dr Maskelyne, who concluded that the luminary could be nothing else than a new comet. Continued observation of it, however, for a few months, dissipated this error; and it became evident that it was, in reality, a hitherto undiscovered planet. This new world, so unexpectedly found to form a part of the system to which our own belongs, received from Herschel the name of *Georgium Sidus*, or *Georgian Star*, in honour of the king of England; but by continental astronomers it has been more generally called either *Herschel*, after its discoverer, or *Uranus*. He afterwards discovered, successively, no fewer than six satellites or moons, belonging to his new planet.

The announcement of the discovery of the *Georgium Sidus* at once made Herschel's name universally known. In the course of a few months the king bestowed upon him a pension of £300 a-year, that he might be enabled entirely to relinquish his engagements at Bath; and upon this he came to reside at Slough, near Windsor. He now devoted himself entirely to science; and the constructing of telescopes, and observations of the heavens, continued to form the occupations of the remainder of his life. Astronomy is indebted to him for many other most interesting discoveries besides the celebrated one of which we have just given an account, as well as for a variety of speculations of the most ingenious, original, and profound character. But of these we cannot here attempt any detail. He also introduced some important improvements into the construction of the reflecting telescope, besides continuing to fabricate that instrument of dimensions greatly exceeding any that had been formerly attempted, with powers surpassing, in nearly a corresponding degree, what had ever been before obtained. The largest telescope which he ever made, was his famous one of forty feet long, which he erected at Slough, for the king. It was begun about the end of the year 1785, and on the 28th of August 1789 the enormous tube was poised on the complicated but ingeniously contrived mechanism by which its movements were to be regulated, and ready for use. On the same day a new satellite of Saturn was detected by it, being the sixth which had been observed attendant upon that planet. A seventh was afterwards discovered by means of the same instrument. This telescope has since been taken down, and replaced by another of only one-half the length, constructed by the distinguished son of the subject of our present sketch.

So extraordinary was the ardour of this great astronomer

in the study of his favourite science, that for many years, it has been asserted, he never was in bed at any hour during which the stars were visible; and he made almost all his observations, whatever was the season of the year, not under cover, but in his garden, and in the open air—and generally without an attendant. By these investigations Herschel became acquainted with the character of the more distant stars, upon which he wrote a variety of papers. In 1802, he presented to the Royal Society a catalogue of five thousand new nebulae, nebulous stars, planetary nebulae, and clusters of stars; thus opening up a boundless field of research, and making the world aware of the sublime truth of there being an infinitude of heavenly bodies far beyond the reach of ordinary vision, and performing in their appointed places the offices of suns to unseen systems of planets.

These discoveries established Herschel's claims to rank amongst the most eminent astronomers of the age, and amply merited the distinctions conferred upon him by learned bodies and the reigning prince. In 1816, George IV., then Prince Regent, invested him with the Hanoverian and Guelphic order of knighthood. He was now, from being originally a poor lad in a regimental band, rewarded for his long course of honourable exertion in the cause of a science upon which so much of our national welfare depends. Herschel (now Sir William) did not relinquish his astronomical observations until within a few years of his death, which took place on the 23d of August 1822, at the advanced age of eighty-three. He died full of years and honours, bequeathing a large fortune, and leaving a family which has inherited his genius.

SIR HUMPHRY DAVY.

HUMPHRY DAVY, one of the most laborious and successful explorers of the science of chemistry in modern times, was born at Penzance in Cornwall, on the 17th of December 1778. His parents belonged to the humbler order of society, but were nevertheless respectable. After receiving the elements of education at Penzance, and being for some time at the grammar school of Truro, he was bound apprentice, in 1795, to a surgeon-apothecary in his native town. When thus entering upon a profession, the condition of his family was sufficiently humble, and he no doubt foresaw that his success in life would depend on his own exertions. We are informed that at this time, his father having died, his mother found herself under the neces-

sity of becoming a milliner in Penzance, by which she contrived to glean an honourable subsistence for her family.

Little is known of Davy's early character, beyond the circumstance of his facility in gathering and treasuring up the information which his books afforded him, and his predilection for poetry. While acting in the capacity of apothecary's apprentice, he devoted his leisure hours to examinations into the productions of nature, as well as into chemical science. His instruments were supplied by his own ingenuity. In the contrivance of apparatus and invention of expedients, he evinced great proficiency; and in after years, it is allowed by scientific men, that in this respect, as well as in others, he stood unrivalled. Whilst aspiring after distinction in the paths of philosophical discovery, he was indebted for emergence from the obscurity of his native place, to the accidental notice of Mr Davies Giddy Gilbert. This worthy individual took an interest in the chemical pursuits of his young acquaintance, and remained ever afterwards his steady friend. Principally through the interest of this gentleman, young Davy was engaged by Dr Beddoes to superintend a pneumatic medical institution, which that able but eccentric man had established at Bristol for the treatment of diseases.

In October 1798, Davy quitted Penzance for Bristol, having then scarcely attained his twentieth year, his master having kindly given up his indenture, so as not to stand in the way of his advancement. Removed from a small country town to a populous city offering scope for the exercise of his genius, Davy now felt as if in a new world. He associated with men engaged in those philosophical pursuits in which he found so much delight, was provided with suitable apparatus, and speedily entered upon that brilliant career of discovery which has rendered his name so illustrious. It was not his intention to abandon the study or practice of medicine; but after a short time he found it necessary to do so, and direct his whole attention to chemistry. It was at this period of his life that Davy pursued a series of hazardous experiments upon nitrous oxide—a gas which, if incautiously used, is destructive of animal life, and when taken into the lungs produces highly increased muscular action, and a propensity to indulge in laughter. Davy not only inhaled this dangerous fluid, but also carburetted hydrogen and carbonic acid gas, with a view to develop facts illustrative of their nature. The fame which followed the publication of these investigations, spread the fame of the young chemist. At this period the establishment of the Royal Institution in London took place, and Davy was invited to become assistant professor of chemistry, and director

of the laboratory. He accepted the offer, and, in the beginning of the year 1801, entered upon the duties of his situation.

Only a few weeks had elapsed in this new sphere of exertion when he was appointed by the managers lecturer in chemistry, instead of assistant. His first lecture was delivered in 1802, and from this period we may date the commencement of his splendid career. He at once succeeded in making a strong impression upon the public mind, and by a series of brilliant discoveries he was enabled to maintain it till the hour of his death. His discourses were admirably adapted to fascinate his audience, which was composed, not of philosophers alone, but the gay and fashionable of the city, a considerable proportion of whom were ladies in the higher walks of life. His experiments, particularly with the voltaic battery, an instrument with which he was destined to work such miracles, riveted universal attention; philosophers admired and applauded, and the softer sex were involved in the most agreeable terrors. His style was highly florid. It largely partook of that poetical inspiration, which, as has been already stated, he so early evinced the possession of. Coleridge the poet was a constant attendant on the lectures, and has himself declared it was to increase the stock of his metaphors. So great was Davy's popularity, that duchesses vied with each other in doing homage to his genius; compliments, invitations, and presents, were showered upon him from all quarters, and no entertainment was considered complete without the presence of the chemical lecturer. All this adulation had its usual effect upon the mind of Davy; his devoted love of science remained unabated till the day of his death; but that simplicity of manners, which he brought with him from the country, and which so endeared him to his friends, was unfortunately in a great measure obliterated.

In 1803, he commenced a series of lectures on agriculture, which were continued for several years. These were afterwards published in a collected form, and they are considered as forming the most philosophical and valuable work upon the subject which has ever appeared. In the same year he was elected a fellow of the Royal Society. From this period until 1807, he continued to increase in popularity, making at intervals discoveries which would entitle humbler investigators to an honourable place in the annals of science. His leisure months were spent in the country, sometimes encircled by his relations in the bosom of his native hills, at other times at the seats of noblemen and others; for all ranks delighted to honour him. But wherever he went, angling was his amusement. To this humble recreation he was as passionately attached as Isaac Walton himself, and in after-years he made it the sub-

ject of a small treatise, which, however, was more of a reflective than a practical character.

We have now arrived at that period of his career when he effected those discoveries which have more particularly distinguished his name. We allude to his developement of the laws of voltaic electricity. This had hitherto been a subject involved in great confusion. The most contradictory theories had been repeatedly proposed, and as often abandoned, both in England and on the Continent. In a limited biography like the present, it is impossible to give a detail of the exact situation in which affairs stood at this eventful period. It is sufficient to say, that Davy brought this department of science to a state of extraordinary perfection. Indeed, he may be said to have created it the same way as Newton is allowed to have explained the true theory of the universe. The announcement of these discoveries connecting chemistry with galvanism, and establishing that chemical combinations and decompositions were referable to the law of electric attractions and repulsions, was received with applause by all the scientific men in Europe. Some idea of this may be formed from the circumstance, that it was crowned by the Institute of France with the prize of the medal of three thousand francs, and that at a time when the nations mutually entertained the bitterest hostility towards each other, and were at open war. The prize here awarded was one founded by Napoleon when First Consul, for important discoveries in electricity and galvanism.

Having discovered the general principle of voltaic electricity, he proceeded in his investigation of phenomena; and the result was the brilliant and startling discovery that the fixed alkalies have metallic bases. It is well known, that, amongst other substances, potash and soda are in chemical language called alkalies. The former of these substances was submitted to the agency of a galvanic battery, and, by a variety of ingenious expedients, he succeeded in decomposing it, and obtaining as one of its constituents small globules of metal resembling quicksilver. Some of these no sooner appeared than they burned with an explosion of bright flame. The difficulty of collecting this new and singular metal was great, from the strong attraction it has for oxygen, one of the gases of which air and water are composed; but, after various trials, he ultimately accomplished his object. Its external character is that of a white metal, instantly tarnishing by exposure to air. It received from its discoverer the appropriate name of *potassium*. When thrown upon water, it decomposes that fluid, combining with its oxygen, and an explosion is produced, accompanied with a vehement flame. If ice be substi-

tuted for water, potassium burns with a bright rose-coloured flame, and a deep hole is made in the ice, which is found to contain a solution of potash. The latter substance, then, is a metallic oxide. Soda, and other alkalies, underwent the same rigorous investigation, and with a similar result.

Various other investigations engaged his attention, the principal of which was regarding the nature of chlorine, and this he determined was a simple gas, by a variety of admirable experiments. In the years 1810 and 1811, he was invited to Dublin, to deliver lectures on chemistry, and other scientific subjects. In 1812, he published his *Elements of Chemical Philosophy*, the most valuable record of discovery which has ever appeared since the *Principia* of Newton. The same year he married Mrs Apreece, who brought him a large fortune. A day or two previous to this event he was knighted, being the first who received the honour from the Prince Regent.

Davy's acquisition of fortune by marriage, along with the honour of knighthood, would seem to have had no good effect upon his mind. His original simplicity of character was already lost in the intoxication produced by the applauses which had been showered upon him; and he now exhibited to the world a spectacle of arrogance which it is painful to contemplate in such a character. In the year 1813, he obtained permission of Bonaparte to travel in France, and he forthwith proceeded to Paris. "The most remarkable circumstance (says his biographer, in the *Encyclopædia Britannica*), arising out of Davy's visit to Paris, was the proof it afforded of his utter want of any relish for the sublimest productions of the pencil and the chisel, with which the French capital then abounded. He was well received by the French philosophers; he was honoured by their flattering attentions; but we are constrained to say that he returned their courtesies with an arrogance and ridiculous affectation of superiority, which justly offended, and tended much more to lower English philosophy than to elevate Davy in their estimation. Another act of ill-judged interference completed the disgust which his absurd conduct had excited. Before the time of Davy's visit to France, Courtois had discovered *iodine*, and Gay-Lussac and Thenard were engaged upon its properties. Some of that substance was given to Davy by Ampere, and he immediately began to examine it. On the 11th of December he offered to the Institute a general view of its nature and relations, and transmitted to London an account of its properties, which was read to the Royal Society on the 20th of January 1814. This paper is introduced with the remark that "Gay-Lussac is still engaged

in experiments on this subject ; and from his activity and great sagacity, a complete chemical history of it may be anticipated. This priority of occupation ought to have prevented Davy from the ungenerous anticipation."—We introduce this circumstance, to show how the greatest of men are not exempt from failings, and how, when intoxicated with approbation, they are apt to throw aside those moral qualities which alone can make them respected.

Before Davy's return to England, he visited Florence, Rome, and Naples, and made some observations on the phenomena of Vesuvius. A few months after his return to his native country, his attention was called to the subject of those terrible explosions of inflammable air, or fire-damp, in coal mines, which were then of frequent occurrence. He accordingly, with great alacrity, commenced an investigation into the nature of this gas, and in an incredibly short space of time he had invented no less than four different kinds of lamps; all of which might be used with impunity in the foulest atmosphere. To explain the subject simply, it may be stated, that in the course of his researches upon the subject, he made the following discovery—that if a lamp or candle be surrounded with wire gauze, or metallic plates, perforated with numerous small holes, though the gas or fire-damp may explode within, it will not inflame the surrounding atmosphere without. Upon this principle, accordingly, the safety lamp was formed ; and, except in particular cases, it completely answers the purposes for which it was invented. Sir Humphry also discovered, that if a coil of platinum wire be suspended over the wick of the lamp, although the latter should be extinguished, the former will glow with a light sufficiently strong to guide the miner through the darkness of his perilous subterranean, and that, when he reaches a purer atmosphere, the heat will be sometimes sufficient to rekindle his lamp !

In the year 1818, Sir Humphry took his departure for Naples, in order to examine the papyri of Herculaneum, and, if possible, discover some method of separating the leaves from each other. His efforts, however, failed, not from want of zeal or ingenuity on his part, but from the state in which the manuscripts were found. He returned to England, and was elected President of the Royal Society. On the 30th November 1820, he took his seat in the chair of Newton.

It will be impossible to enumerate all the objects of inquiry which attracted the attention of this indefatigable philosopher during the remainder of his life. The most important was that regarding the corrosive action of sea-water upon copper. He commenced his investigations in 1823, and prosecuted them

for a considerable period. The truth of his beautiful theory was established ; but, strange to say, the remedy failed. There can be little doubt, however, that, had his health continued, he would ultimately have succeeded. But disease began to set its seal upon his frame, and distract his attention from grave studies. In 1828, he took his departure for the Continent, in hopes that a milder climate would have some favourable effect upon him ; but health was petitioned in vain—he was destined never to return. The lamp of genius, however, burned bright to the last, as was testified by his “*Consolations in Travel, or Last Days of a Philosopher*,” a work evincing considerable depth of reflection, but marred by a wild extravagance of fancy. He continued for some time at Rome, and afterwards proceeded to Geneva, where he expired, of an attack of apoplexy, on the 30th of May 1829.

In concluding our memoir of Sir Humphry Davy, we cannot do better than quote the words of his biographer in the *Encyclopædia*, already adverted to. “We have sufficiently characterised the various productions of this eminent man in our review of his life. We have alluded to those little infirmities which mix themselves with the aspirations of genius, with no unfriendly intention. They are specks in its bright mirror, which they do not obscure ; but as every thing connected with such a man belongs to history, they should not be passed over in silence ; for while the example of his great qualities is held up to animate the exertions of unfriended talent struggling with obscurity, the consequences of his infirmities may become more valuable lessons to check the presumption of successful genius.”

SAUNDERSON, HUBER, AND BLACKLOCK.

AMONG men who have distinguished themselves in literary and scientific pursuits, and been remarkable for the difficulties which they overcame in attaining eminence in society, no instances are more surprising or worthy of being known than those in which the aspiring individuals laboured under the calamity of total blindness. Nothing almost appears so wonderful as the intelligence and general knowledge often possessed by persons who are deprived of the powers of vision. They are heard to talk with fluency and correctness of the nature and even outward appearance of objects whose character they can only imagine. It seems that by a wise provision of nature, there is a compensating power in the human

faculties, by which, when one sense is destroyed, others gain greater vigour. Hence, when the sight is lost, the senses of touch and hearing become more acute; and it is equally certain that the deprivation of vision assists powerfully in promoting depth of reflection, and in exciting the imaginative faculties.

Among the ancients, there were a number of distinguished blind men, among the rest Democritus, who is said to have put out his eyes, in order that his mind should attain greater vigour of thought. In modern times, Germany, Italy, France, England, and other European countries, have produced individuals who attained an eminent rank in the practice of the arts, literature, and science, although in a state of total blindness. One of the most remarkable of these men was the subject of the following memoir.

NICHOLAS SAUNDERSON.

Nicholas Saunderson was born in 1682, at the village of Thurlston, in Yorkshire, where his father, besides a small estate, enjoyed a place in the excise. When he was twelve months old, he was deprived, by the small-pox, not only of his sight, but of his eyes also, for they came away in abscesses; so that he retained no more idea of light and colours than if he had been born blind. It is probable that this entire deprivation of sight led the unfortunate youth to a course of scholastic studies, which he might not, in more favourable circumstances, have pursued with so much diligence. He was sent at an early age to a free-school at Penniston, in the neighbourhood of his native place, and there laid the foundation of that knowledge of the Greek and Latin languages, which he afterwards improved so far by his application, as to understand the works of Euclid, and other ancient authors when read in the original. We are not informed with respect to the mode by which he was taught at school, but it is reasonable to suppose that some one read his lessons to him, and otherwise rendered him such assistance as was necessary.

As soon as he had gone through the business of the grammar-school, his father, whose occupation led him to be conversant in numbers, began to instruct him in the common rules of arithmetic. Here it was that his genius first appeared: he soon became able to work the common questions, to make long calculations by the strength of his memory, and to form new rules to himself for the more ready solving of such problems as are often proposed to learners, more with a design to perplex than to instruct. At eighteen, he was introduced to the acquaintance of Richard West of Undorbank, Esq. a gentleman of fortune, and a lover of the mathematics, who, ob-

serving his uncommon capacity, took the pains to instruct him in the principles of algebra and geometry, and gave him every encouragement in his power to the prosecution of these studies. Soon after, he grew acquainted with Dr Nettleton, who took the same pains with him; and it was to these gentlemen that he owed his first instruction in the mathematical sciences. They furnished him with books, and often read and expounded them to him; but he soon surpassed his masters, and became fitter to teach, than learn any thing from them.

His passion for learning growing up with him, his father encouraged it, and sent him to a private academy at Attercliff, near Sheffield. Logic and metaphysics, it seems, made up the principal learning of this school: the former, being chiefly the art of disputing in mood and figure, a dry study, conversant only in words, the latter, dealing in such abstract ideas as have not the objects of sense for their foundation, were neither of them agreeable to the genius of Saunderson, and therefore he made but a short stay here. He remained some time after in the country, prosecuting his studies in his own way, without either guide or assistant: indeed, he needed no other than a good author, and some person that could read it to him; being able, by the strength of his own abilities, to surmount all difficulties that might occur. His education had hitherto been carried on at the expense of his father, who, having a numerous family, grew uneasy under the burden: his friends, therefore, began to think of fixing him in some way of business, by which he might support himself. His own inclination led him strongly to Cambridge, but the expense of an education there was a difficulty not to be got over. At last it was resolved he should try his fortune there, but in a way very uncommon; not as a scholar, but a master; for his friends, observing in him a peculiar felicity in conveying his ideas to others, hoped that he might teach the mathematics with credit and advantage, even in the university; or, if this design should miscarry, they promised themselves success in opening a school for him in London.

Accordingly, in 1707, being now twenty-five, he was brought to Cambridge, by Mr Joshua Dunn, then a fellow-commoner of Christ's College; where he resided with his friend, but was not admitted a member of the college. The society were much pleased with so extraordinary a guest, allotted him a chamber, the use of their library, and indulged him in every privilege that could be of advantage to him. But many difficulties obstructed his design; he was placed here without friends, without fortune, a young man, untaught himself, to be a teacher of philosophy in an university where it then

reigned in the greatest perfection. Whiston, who had succeeded Sir Isaac Newton, was at this time in the mathematical professor's chair, and read lectures in the manner proposed by Saunderson; so that an attempt of this kind looked like an encroachment on the privileges of his office; but, as a good-natured man and an encourager of learning, he readily consented to the application of friends, made in behalf of so uncommon a person. Mr Dunn had been very assiduous in making known his character; his fame in a short time had filled the university; men of learning and curiosity grew ambitious and fond of his acquaintance; so that his lecture, as soon as opened, was frequented by many, and in a short time very much crowded. The *Principia Mathematica*, *Optics*, and *Arithmetica Universalis* of Sir Isaac Newton, were the foundation of his lecture, and they afforded a noble field in which to display his genius. It will be matter of surprise to many, that he should read lectures in optics, discourse on the nature of light and colours, explain the theory of vision, the effect of glasses, the phenomena of the rainbow, and other objects of sight; but if we consider that this science is altogether to be explained by lines, and is subject to the rules of geometry, it will be easy to conceive that he might be a master of these subjects.

As he was instructing the academical youth in the principles of the Newtonian philosophy, it was not long before he became acquainted with the incomparable author, although he had left the university several years, and enjoyed his frequent conversation concerning the more difficult parts of his works. He lived in friendship also with the most eminent mathematicians of the age; with Halley, Cotes, De Moivre, and others. Upon the removal of Whiston from his professorship, Saunderson's mathematical merit was universally allowed to be so much superior to that of any competitor, that an extraordinary step was taken in his favour to qualify him with a degree which the statutes require. Upon application made by the heads of colleges to the Duke of Somerset, their chancellor, a mandate was readily granted by the queen for conferring on him the degree of master of arts; upon which he was chosen Lucasian professor of the mathematics, in November 1711, Sir Isaac Newton all the while interesting himself very much in the affair. His first performance, after he was seated in the chair, was an inauguration speech made in very elegant Latin, and a style truly Ciceronian; for he was well versed in the writings of Tully, who was his favourite in prose, as Virgil and Horace were in verse. From this time he applied himself closely to the reading of lectures, and gave up his whole time

to his pupils. He continued among the gentlemen of Christ's College till 1723, when he took a house in Cambridge, and soon after entered the married life. In 1728, when George II. visited the university, he was pleased to signify his desire of seeing so remarkable a person, and accordingly the professor waited upon his majesty in the senate-house, and was there created doctor of laws by royal favour.

Saunderson was naturally of a strong healthy constitution ; but being too sedentary, and constantly confining himself to the house, he became at length a valetudinarian of a very scorbutic habit. For some years he frequently complained of a numbness in his limbs, which, in the spring of 1739, ended in a mortification of his foot ; when, his blood being in a very ill state, no art or medicines were able to stop its progress. He died on the 19th of April, in his fifty-seventh year. He had much wit and vivacity in conversation, so that none could be a better companion. He had also a great regard to truth, and was one of those sincere men who think it their duty to speak it at all times ; and, therefore, his sentiments on men and opinions, his praises or censures, his friendship or disregard, were expressed without partiality or reserve ; which, as must easily be imagined, would raise him up many enemies, and expose him to many animosities. He received the notice of his approaching death with great calmness and serenity ; and after a short silence, resuming life and spirit, talked with as much composure as usual, till within a short period of his dissolution.

A blind man moving in the sphere of a mathematician, seems a phenomenon difficult to be accounted for, and has excited the admiration of every age in which it has appeared. But if we consider that the ideas of extended quantity, which are the chief objects of mathematics, may as well be acquired from the sense of feeling as that of sight ; that a fixed and steady attention is the principal qualification for this study ; and that the blind are by necessity more abstracted than others, we shall perhaps find reason to suppose that there is no other branch of science more adapted to their circumstances. It was by the sense of feeling that Saunderson acquired most of his ideas at first ; and this he enjoyed in great acuteness and perfection, as it commonly happens to the blind, whether by the gift of nature, or, as is more probable, by the necessity of application. Yet he could not, as some have imagined, distinguish colours by that sense ; and having made repeated trials, he used to say it was pretending to impossibilities. But he could with great nicety and exactness discern the least difference of rough and smooth in a surface, or the least defect of polish. Thus he

distinguished in a set of Roman medals the genuine from the false, though they had been counterfeited with such exactness as to deceive a connoisseur who had judged by the eye. His sense of feeling was very accurate also in distinguishing the least variation in the atmosphere; and he has been seen in a garden, when observations have been making on the sun, to take notice of every cloud that interrupted the observation, almost as justly as they who could see it. He could tell when any thing was held near his face, or when he passed by a tree at no great distance, provided there was a calm air, and little or no wind: these he did by the different pulse of the air upon his face.

An exact and refined ear is what such are commonly blessed with, who are deprived of their eyes: our professor was perhaps inferior to none in the excellence of his. He could readily distinguish to the fifth part of a note; and by his performance on the flute, which he had learned as an amusement in his younger years, discovered such a genius for music, as, if he had cultivated the art, would have probably appeared as wonderful as his skill in the mathematics. By his quickness in this sense he not only distinguished persons with whom he had ever once conversed so long as to fix in his memory the sound of their voice, but in some measure places also. He could judge of the size of a room into which he was introduced, of the distance he was from the wall; and if ever he had walked over a pavement in courts, piazzas, &c. which reflected a sound, and was afterwards conducted thither again, he could exactly tell whereabouts in the walk he was placed, merely by the note it sounded.

There was scarcely any part of the mathematics on which he had not written something for the use of his pupils: but he discovered no intention of publishing any of his works till 1733, when, being importuned by his friends, he composed his "Elements of Algebra," a work which was published after his decease. He also left behind him some valuable comments and improvements upon the Principia of Newton.

The next instance we have to mention of an individual who successfully cultivated scientific pursuits, while in a state of blindness, was Monsieur Huber, a laborious and ingenious naturalist, to whom the world is indebted for one of the best treatises on bees hitherto produced in any language.

FRANCIS HUBER.

Francis Huber was born at Geneva, in Switzerland, on the 2d of July 1750, of a highly respectable family, remarkable for intelligence. His father was distinguished for wit and

originality in conversation, and for a cultivated taste in the fine arts. Voltaire particularly delighted in his company, on account of the freshness and brilliancy of his mind, and his skill in music. He excelled in pictures of game, and wrote an interesting work on the flight of birds of prey. His son inherited his taste and talent.

Study by day, and romance reading during the night, impaired the health of young Huber, and weakened his sight. When he was fifteen years old, the physicians advised entire freedom from all literary occupation. For this purpose, he went to reside in a village near Paris, where he followed the plough, and was for the time a real farmer. Here he acquired a great fondness for rural life, and became strongly attached to the kind and worthy peasants among whom he resided. His health was restored, but with the prospect of approaching blindness. He had, however, sufficiently good eyes to see and become attached to Maria Aimée Lullin, a young lady who had been his companion at a dancing-school. They loved, as warm young hearts will love, and dreamed of no possibility of separation. M. Lullin regarded the increasing probability of Huber's blindness as a sufficient reason for breaking up the connexion; but the more this misfortune became certain, the more Maria determined not to abandon her lover. She made no resistance to the will of her father, but quietly waited until she had attained a lawful age to act for herself.

Poor Huber, fearful of losing his precious prize, tried to conceal from the world, and even from himself, that an entire deprivation of sight was his inevitable lot; but total darkness came upon him, and he could no longer deny that the case was hopeless. The affliction was made doubly keen by fears that Maria would desert him; but he might have trusted the strength of a woman's heart; as soon as Miss Lullin was twenty-five years old, *she* led to the altar the blind object of her youthful affections. The generous girl had loved him in his brilliant days of youth and gaiety, and she would not forsake him when a thick veil fell for ever between him and the glories of the external world. There is something exceedingly beautiful and affecting in this union. Those who witnessed it, at once felt a strong internal conviction that the blessing of God would rest on that gentle and heroic wife.

Voltaire often alluded to the circumstance in his correspondence, and it forms an episode in Madame de Staël's *Delphine*. Mrs Huber had no reason to regret the disinterested step she had taken. Huber's active and brilliant mind overcame the impediments occasioned by loss of vision. His attention was drawn to the history of bees; and by the assistance

of his wife and son, he observed their habits so closely, that he soon became one of the most distinguished naturalists in Europe. His very blindness added to his celebrity; for men naturally admire intellectual strength overcoming physical obstructions. The musical talents which in youth had made Huber a favourite guest, now enlivened his domestic fireside. He enjoyed exercise in the open air; and when his beloved wife was unable to accompany him, he took a solitary ramble, guided by threads, which he had caused to be stretched in the neighbouring walks. He was amiable and benevolent, and all who approached him were inspired with love and respect. Even great success came to him unattended by its usual evils; for the most envious did not venture to detract from the merits of a kind-hearted man, suffering under one of the greatest of human deprivations.

Notwithstanding the loss of his eyes, Huber's countenance was the very sundial of his soul—expressing every ray of thought and every shade of feeling. During forty years of happy union, Mrs Huber proved herself worthy of such a husband's attachment. He was the object of her kindest and most unremitting attention. She read to him, she wrote for him, she walked with him, she watched his bees for him; in a word, her eyes and her heart were wholly devoted to his service. Huber's affection for her was only equalled by his respect. He used to say, "While she lived, I was not sensible of the misfortune of being blind." His children, inspired by their mother's example, attended upon him with the most devoted affection. His son, Pierre Huber, who himself became famous for his history of the economy of ants, was a valuable assistant and beloved companion. He made a set of raised types, with which his father could amuse himself, by printing letters to his friends.

After the death of his wife, Huber lived with a married daughter at Lausanne. Loving and beloved, he closed his calm and useful life at the age of eighty-one.

The circumstance of Huber having possessed his sight till he was fifteen years of age, is calculated considerably to lessen our surprise at the success which attended his labours in the pursuit which his genius led him to follow. He had seen with his eyes the fields, the flowers, the animals which engaged his thoughts; therefore he was placed in a more favourable condition than those whose unassisted imaginations are left to form conceptions of the appearance of the external world. The following instance of the efforts of one blind almost from birth, will be considered fully more worthy of our

admiration. We quote, in an abridged form, from the *Scottish Biographical Dictionary*, by Robert Chambers.

THOMAS BLACKLOCK.

Thomas Blacklock was born on the 10th of November 1721, at Annan, a town in Dumfriesshire. His parents, who were natives of Cumberland, moved in a humble but respectable sphere of life, his father following the occupation of a brick-layer. Before he was six months old, he lost his sight in the small-pox, and was thus rendered incapable of learning a mechanical trade, while the poor circumstances to which a series of misfortunes had reduced his father, placed equally beyond his reach an education for any of those professions where the exercise of the mental faculties is principally required. His affectionate parent seems to have been aware, however, that the happiness of his son, shut out from so many of the enjoyments afforded by the external world, must mainly depend upon his intellectual resources; and in order to form these, he devoted part of his leisure hours to such instruction as his poor blind boy was susceptible of; he read to him at first the books adapted to the understanding of a child, and afterwards those fitted for a maturer capacity, such as Milton, Spenser, Prior, Pope, and Addison. His companions also, who pitied his want of sight, and loved him for his gentle disposition, lent their assistance in this task of kindness, and by their help he acquired some little knowledge of Latin. Thomson and Allan Ramsay were his favourite authors; and it was as early as his twelfth year that he evinced still more decidedly his love of the poetical art, by the composition of an ode addressed to a little girl whom he had offended—a production not remarkable solely on account of the future celebrity of its author, but because it displays at once his mildness of temper and lively fancy.

Thus early did Blacklock show, that in the course of reading chosen for him, his father had not mistaken the bent of his inclination. The very means, however, taken to alleviate Blacklock's misfortune, in some sort increased its force; for as his mind expanded, it taught him to feel with greater keenness his own dependent condition: familiar with some of the noblest flights of genius, and himself become a poet, he would probably have exchanged all his intellectual stores for the ability of earning his bread by handicraft labour. Alternately depressed by a sense of his own helplessness, and comforted by that piety with which he seems to have been from first to last most deeply imbued, Blacklock lived at home till his nineteenth year. A fresh misfortune then

overtook him in the loss of his father, who was crushed to death by the fall of a malt-kiln, with eighty bushels of grain upon it, belonging to his son-in-law. Blacklock's affection for his parents must have exceeded that of other children; for that anxious solicitude about his safety and comfort, which other boys begin to forget when the business of the world removes them from its immediate influence, had been to him extended over those years when to the helplessness of a child he added the sense and feelings of a man. To his keenly susceptible mind this stroke must therefore have been peculiarly afflicting. And it was attended not only with regret on account of remembered benefits, but also by the anticipation of future evils. A means of livelihood was indeed suggested by Blacklock's love of music. As he played well on the violin and flute, and even composed pieces with taste, it was proposed that he should follow this art as a profession. But the unhappy situation in which he was then placed, made him dread consequences to which he could never reconcile his mind. The very thought that his time and talents should be prostrated to the forwarding of loose mirth and riot, inspired him with an honest indignation. Unable to bring down his mind to this occupation—the only one which seemed within his reach—deprived of the stay on which he had hitherto leaned, blind and feeble, no wonder that the fate of a houseless beggar sometimes presented itself as what might possibly happen to himself. Although gloomy anticipations like these sometimes intruded, Blacklock did not permit them to overwhelm him; but calming his fears, he continued to live with his mother for a year after his father's death. Some of his poems had now got abroad, and made him known beyond his own immediate circle of friends. We shall not pretend to deny that the circumstance of his blindness had some effect, in addition to the intrinsic merits of these productions, in making them be sought after and dispersed among literary persons. On account of their being the verses of a blind poet, they were no doubt read by many who were little able to appreciate their real excellences, and who, having gratified their curiosity, did not concern themselves about the condition of the author; but still by this means the fame of Blacklock's genius was extended; and at last it reached a gentleman, who to curiosity added benevolence of heart. This was Dr John Stevenson, a physician in Edinburgh, who, while on a professional visit in Dumfries, saw some of our author's pieces, and resolved to afford the young man's talents the opportunity of expanding in avocations and amid society more congenial to one so much restricted to pleasures of an intellectual kind. Accordingly, Blacklock

was, in 1741, induced to remove to the metropolis, where he attended a grammar-school for some time, and afterwards entered as a student in the college, Dr Stevenson supplying him with the means necessary for the prosecution of his studies. He was very grateful for these attentions; and that he never forgot the benefits bestowed upon himself, is manifested by the ready zeal which his future life at all times displayed for the encouragement of unnoticed genius.

Blacklock's studies were interrupted by the expedition of the Highlanders, in 1745; and during the distractions consequent upon that memorable campaign, he resided in Dumfries with Mr M'Murdo, his brother-in-law. On the re-establishment of peace, he returned to college, and studied six years more. In this period he acquired a good knowledge of all those branches of education where he was not hindered by the want of sight, and became better skilled than was common in the French language, from being on habits of intimacy with the family of Provost Alexander, whose wife was a Parisian. It may well inspire wonder that latterly there was no science with which Blacklock had not made himself acquainted—no learned language which he did not master—and no modern tongue, of any acknowledged use to a man of general literature, with which he was not more or less familiar. Amid the severer studies of classical learning, philosophy, and theology, his attachment to poetry was not forgotten. In 1746, a volume of his verses in octavo was published at Glasgow. A second edition followed at Edinburgh, in 1754; and two years afterwards, a quarto edition, with an account of his life by Mr Spence, professor of poetry at Oxford, came out by subscription in London.

The course of study followed by Blacklock at college was that usually gone through for the purpose of entering upon the ministry; but it was not till after the abandonment of a project for delivering lectures on oratory, that he finally adopted the resolution of becoming a clergyman—a resolution which, from his infirmity, we cannot but consider rash and presumptuous, as will be immediately proved. Having applied himself for some time exclusively to the necessary studies, he was licensed as a preacher by the presbytery of Dumfries, in 1759. He soon acquired considerable reputation as a pulpit orator, and took great delight in composing sermons. In 1762, the Earl of Selkirk procured from the crown a presentation to the parish of Kirkcudbright in favour of Mr Blacklock, who, having thus the prospect of a competent income, married Mrs Sarah Johnston, daughter of Mr Joseph Johnston, surgeon in Dumfries. But though not disappointed in

the happiness he expected to derive from this union, the gleam of fortune which seems to have induced him to form it, forsook him immediately after the step was taken. He was ordained a few days after his marriage; but the people of the parish refused, on account of his blindness, to acknowledge him as their pastor; and a lawsuit was commenced, which, after two years, was compromised, by Blacklock retiring upon a moderate annuity. From the first moment of opposition, it had been his wish to make this arrangement, not from any conviction of incompetency to the duties of a parish minister, but because he saw it was needless to contend against a feeling so strongly maintained.

In 1764, after the connection between him and the parish of Kirkcudbright was dissolved in the manner just mentioned, Blacklock removed to Edinburgh, where he received boarders into his house, superintending the studies of those who chose to have such assistance. In this occupation no teacher was perhaps ever more agreeable to his pupils, nor master of a family to its inmates, than Dr Blacklock. The gentleness of his manners, the benignity of his disposition, and that warm interest in the happiness of others which led him so constantly to promote it, were qualities that could not fail to procure him the love and regard of the young people committed to his charge; while the society which esteem and respect for his character and his genius often assembled at his house, afforded them an advantage rarely to be found in establishments of a similar kind. In these hours of social relaxation, Blacklock found one of the greatest pleasures of his existence. Music also afforded him a lively gratification; for he sang with taste, and performed tolerably well on several instruments, particularly on the flute.

Finding that his increasing years and infirmities required repose, Dr Blacklock discontinued the keeping of boarders in 1787. But though his bodily vigour began to fail, he experienced no diminution of that benevolence which had ever characterised him. His own genius having been greatly indebted to patronage, he was ready to acknowledge it in others, and especially to cultivate and bring it into reputation where he found it struggling with obscurity. Nor were his efforts for this purpose confined to occasional acts of liberality—they were laborious and long continued. He had taken a boy from a village near Carlisle to lead him, and perceiving in the youth a willingness to learn, taught him Latin, Greek, and French, and having thus fitted him for a situation superior to that in which he was born, procured for him the situation of secretary to Lord Milton, who was chief active manager of state affairs

in Scotland for many years. This young man was Richard Hewitt, known to the admirers of Scottish song as the author of "Moslin Castle." Hewitt testified his gratitude to his instructor by a copy of complimentary verses, in every line of which may be traced the chief excellence of compositions of that description—sincerity; but he did not long enjoy his change of fortune, having died in 1764, from the fatigue of the office to which he had been elevated.

But we find a still more eminent example of Blacklock's solicitude to promote the interests of the sons of genius, in his being the first man among the literary circles of Edinburgh who appreciated the poetry of Burns, and kindled in the author the ambition of a prize beyond that of provincial fame. The Rev. Mr Lawrie of Newmills had transmitted to Blacklock a copy of the Kilmarnock edition of Burns's Poems. It is not easy for a modern reader to understand with what wonder and delight Blacklock must have perused them. With calmness, yet with energy, the enthusiastic Blacklock indicated his own admiration, and the certainty of the poet's future fame. "I had taken the last farewell of my few friends," says Burns; "my chest was on the road to Greenock; I had composed the last song I should ever measure in Scotland—'The gloomy night is gathering fast'—when a letter from Dr Blacklock to a friend of mine overthrew all my schemes, by opening new prospects to my poetic ambition. The doctor belonged to a set of critics for whose applause I had not dared to hope. His opinion that I would meet with encouragement in Edinburgh for a second edition, fired me so much, that away I posted for that city, without a single acquaintance, or a single letter of introduction." "Blacklock received him," says Dr Currie, "with all the ardour of affectionate admiration; he eagerly introduced him to the respectable circle of his friends; he consulted his interest; he emblazoned his fame; he lavished upon him all the kindness of a generous and feeling heart, into which nothing selfish or envious ever found admittance."

Besides the miscellaneous poems by which Dr Blacklock is best known as an author, he published several other works. In 1783, he contributed to the *Encyclopædia Britannica* the article *BLIND*—a little treatise of peculiar interest. He is also said to have written the essay on Poetry, and others on various subjects, in the same work, and left behind him, in manuscript, some volumes of sermons and a treatise on Morals. In his latter years he was occasionally afflicted with deafness—in his case a double calamity, as at the period when it visited him, he was in a manner shut out from all communication with the external world. In this forlorn condition—old, blind,

and sometimes deaf—it was more difficult for him than formerly to bear up against the depression of spirits to which he had always been more or less subject; but his gentleness of temper never forsook him; and though he could not altogether avoid complaint, he was not loath to discover and state some alleviating circumstance along with it. He died from fever, after a week's illness, on the 7th July 1791, and was buried in the ground of St Cuthbert's Chapel of Ease, where there is a tombstone erected to his memory, with an inscription by Dr Beattie.

It has been said of Blacklock that "he never lost a friend nor made a foe;" and few literary men have passed through life so perfectly free from envious feeling, and so entirely respected and beloved. His conversation was lively and entertaining; his wit was acknowledged, but it had no tinge of malice; his temper was gentle, his feelings warm—intense; his whole character was one to which may be applied the epithet of amiable, without any qualification. To Blacklock as a poet, the rank of first-rate excellence has not been assigned, and is not claimed; but his works possess solid merits, which will always repay a perusal. As the production of a blind man, they present a study of the very highest interest, and have frequently been the subject of discussion as a problem in the science of mind.

MISCELLANEOUS BIOGRAPHIC NOTICES.

WE have now offered to the study of the youthful mind a series of memoirs of individuals, whose lives afford striking examples of what may be accomplished by means of steady perseverance, skill, and integrity. In the enterprise and sufferings, but subsequent fame, of Copernicus, Galileo, Guttenberg, and Columbus—the industry and perseverance, under difficulties, of Franklin, Ferguson, Lackington, Whitney, Dodsley, and others—the philanthropy of Howard and Pestalozzi—the ardent pursuit of knowledge displayed by Sir William Jones, Murray, and Leyden—the unwearied efforts and painful sacrifices of Park and Clapperton—the patriotism of Washington—and the splendid discoveries of Watt, Arkwright, and Taylor—we find ample matter for admiration, and examples worthy of being followed. Numerous as are the instances which we have presented of men having risen, through the force of talent and application, to eminent situa-

tions in life, there remain, within the scope of general biography, innumerable cases equally remarkable and instructive.

Publius Syrus, Terence, and Epictetus, all distinguished men in ancient times, were slaves at their outset in life.—Cæcilius Statius, a celebrated dramatic writer in ancient Rome, was also originally a slave, but was emancipated in consequence of his talents.—Protagoras, a Greek philosopher, was at first a common porter.—Cleanthes, another philosopher, was a pugilist, and also supported himself at first by drawing water and carrying burdens.—Demosthenes, one of the greatest orators of antiquity, was the son of a sword-blade manufacturer at Athens, and was left an orphan at seven years of age; and it was with incredible perseverance and labour that he brought himself into notice.—The late Professor Heyne of Gottingen, one of the greatest classical scholars of his own or any other age, was the son of a poor weaver, and for many years had to struggle with the most depressing poverty. The efforts of this excellent man of genius appear to have been greater and more protracted than those of any other on record, but he was finally rewarded with the highest honours.—Bandoccin, one of the learned men of the sixteenth century, was the son of a shoemaker, and worked for many years at the same business.—Gelli, a celebrated Italian writer, began life as a tailor; and although he rose to eminence in literature, he never forgot his original profession, which he took pleasure in mentioning in his lectures.—The elder Opie, whose talent for painting was well appreciated, was originally a working carpenter in Cornwall, and was discovered by Dr Wolcott (otherwise Peter Pindar) working as a sawyer at the bottom of a sawpit.—Abbot, Archbishop of Canterbury, who flourished in the sixteenth century, and distinguished himself by opposing the schemes of Charles I., was the son of a cloth-worker at Guildford.—Akenhead, the author of *Pleasures of Imagination*, was the son of a butcher in Newcastle-upon-Tyne.—D'Alembert, the French mathematician, was left at the steps of a church by his parents, and brought up by a poor woman as a foundling, yet arrived at great celebrity, and never forgot or abandoned his nurse.—Amyot, a French author of some celebrity for his version of Plutarch, lived in the sixteenth century, and was at first so poor as to be unable to afford oil or candles to assist his studies, which he had to carry on by fire light; and all the sustenance his parents could afford him was a loaf of bread weekly.—George Anderson, the translator of a treatise of Archimedes, and author of a *General View of the East India Company's affairs*, who died in 1796, was originally a day-labourer.

Dr Adam, who, in 1809, died rector of the High School of Edinburgh, rose from a very humble condition in life. When he came to Edinburgh to pursue his youthful studies, he was in a state of extreme poverty. He lodged in a small room at Restalrig, in the north-eastern suburbs; and for this accommodation he paid fourpence a-week. All his meals, except dinner, uniformly consisted of oatmeal made into porridge, together with small beer, of which he only allowed himself half a bottle at a time. When he wished to dine, he purchased a penny loaf at the nearest baker's shop; and if the day was fair, he would dispatch his meal in a walk to the Meadows or Hope Park, which is adjoining to the southern part of the city; but if the weather was foul, he had recourse to some long and lonely stair, which he would climb, eating his dinner at every step. By this means all expense for cookery was avoided, and he wasted neither coal nor candles; for when he was chill, he used to run till his blood began to glow; and his evening studies were always prosecuted under the roof of some one or other of his companions. There are many instances, we believe, among Scottish students, of the most rigid self-denial, crowned at length by splendid success; but there is certainly no case known in which self-denial was so chastened, and the triumph so grand, as that of Dr Adam. Ere he had yet reached his twenty-first year, he was employed as a teacher in George Watson's Hospital at Edinburgh, an institution designed for the support and education of a certain number of boys. In 1761, when he was exactly twenty, he stood a trial for the situation of head teacher in this establishment, and was successful. He subsequently composed and published a number of useful works belonging to classical study, and attained the eminent situation above mentioned.

Pope Adrian VI., one of the most eminent scholars of his time, began life in a state of extreme destitution. He could not afford candles wherewith to pursue his studies, and often read by the light of street lamps, or in the church porches, where lights are often kept burning; his eminent acquirements, and unimpeachable character, led him successively through different preferments in the church, till he was elected pope.—Claude Lorraine, Salvator Rosa, and other eminent painters, commenced their career in poverty and neglect, and owed all solely to their exertions and genius.—Astle, the archæologist, and author of a work on the origin and progress of writing, was the son of the keeper of Needwood Forest.—Augereau, marshal of France, and Duke de Castiglione, under Bonaparte, was originally a private soldier in the French and Neapolitan ranks.—John Bacon, an emi-

ment sculptor of last century, was originally a painter of porcelain for potters.—Baillet, a laborious and learned French writer, was born of poor parents at Neuville, in Picardy, but he extricated and raised himself by his genius.—Ballard, the author of *Memoirs of British Ladies*, was originally a stay and habit maker; but being patronised for his acquirements, he was educated at Oxford, and made beadle of that university.—Barker, the inventor of pictorial representation by panorama, having failed in business, became a miniature painter, and settled at Edinburgh; and it was while resident there, and taking a view from the Calton Hill, that the idea of forming a panorama entered his mind. His invention realised him a fortune.—Beattie, the author of the *Minstrel*, and professor of moral philosophy in Aberdeen University, was originally a parish schoolmaster at Fordun.—Belzoni, one of the most eminent travellers in Egypt, at one period supported himself by exhibiting feats of strength in different towns in Great Britain.—The famous Admiral Benbow served at first as a common sailor in a merchant vessel.

Miss Benger, the authoress of the *Life of Mary Queen of Scots*, and many other productions of merit, was so very poor in early life, that, for the sake of reading, she used to peruse the pages of books in a bookseller's window, in a little town in Wiltshire, where she resided, and returned day after day, in the hope of finding another page turned over. She afterwards obtained friends who assisted her.—Sebastian Castalio, the elegant Latin translator of the Bible, was born of poor peasants, who lived among the mountains of Dauphiny.—The Abbé Hautefeuille, who distinguished himself in the seventeenth century by his inventions in clock and watch making, was the son of a baker.—The eminent Prideaux, who rose to be Bishop of Winchester, was born of such poor parents, that they could with difficulty keep him at school, and he acquired the rudiments of his education by acting as an assistant in the kitchen of Exeter College, Oxford.—The father of the famous Inigo Jones was a cloth-worker.—Sir Edmund Saunders, chief justice of the King's Bench in the reign of Charles II., was originally an errand boy to the young lawyers.—Linnæus was apprenticed to a shoemaker, with whom he wrought for some time, till rescued by a generous patron, who saw his genius for learning.—Lomonosoff, one of the most celebrated Russian poets of last century, began life as a poor fisher boy.—The famous Ben Jonson worked for some years as a bricklayer; but while he had a trowel in his hand, he had a book in his pocket.—Peter Ramus, a celebrated writer of the sixteenth century, was at first a shepherd boy, and obtained his education by serv-

ing as a lacquey to the college of Navarre.—Longomontanus, the Danish astronomer, was the son of a labourer.—Pareus, professor of theology at Heidelberg, and an eminent divine, was at first an apprentice to a shoemaker.—Haas Sacho, an eminent Gerinan poet and scholar, was the son of a tailor, and he himself wrought as a shoemaker for many years.—John Folcz, an old German poet, was a barber.—Lucas Cornelisz, a Dutch painter of the sixteenth century, had occasionally to support his family as a cook in gentlemen's kitchens.—The illustrious Kepler spent his life in poverty, but in apparent contentment.—Winckelman was so poor while a student, that he sang ballads through the streets at night for his support.—Wolfgang Musculus, another eminent German, commenced his career in a similar manner, having for some time sung ballads through the country, and begged from door to door, in order to obtain bread.

Dr Isaac Maddox, Bishop of Worcester, and known for his writings in defence of the church, was the son of a pastry-cook.—The late Dr Isaac Milner, Dean of Carlisle, and Lucasian professor of mathematics at Cambridge, was at first a weaver.—Dr White, professor of Arabic at Oxford, was also a weaver in his youth.—Thedem, the chief surgeon of Frederick the Great, had in his youth been apprenticed to a tailor.—The celebrated John Hunter, the anatomist, was originally apprentice to a cabinetmaker.—William Kent and Francis Towne, landscape-painters of eminence, began as apprentices to coach-painters.—The famous Hogarth raised himself from the condition of a working engraver on silver.—Edmund Stone, the eminent mathematician, was originally a boy who wrought in the garden of the Duke of Argyle, at Inverary, and who taught himself to read.—Buchanan, the Scottish historian, was born of poor parents, and being sent by an uncle to Paris for his education, he was there so neglected, that, in order to get back to his own country, he enlisted as a private soldier in a corps leaving France for Scotland: Buchanan had to undergo many difficulties before his learning was appreciated.—Cervantes, the author of *Don Quixote*, commenced life as a soldier, lost his left hand in battle, and was a captive in Algiers for five years, during which period he wrote part of his celebrated work.—Giordani, an Italian engineer and mathematician of the seventeenth century, was originally a common soldier on board of one of the Pope's galleys.—William Hutton, the eminent historian of Birmingham, and the author of some miscellaneous pieces, was the son of a poor woolcomber, and suffered the severest pangs of poverty in his early years.—Joly, the French dramatist, was the son of the keeper of a coffee-

house.—Erasmus, a celebrated Dutch scholar, endured great poverty while a student.—Boydell, one of the most eminent printsellers in Europe, and at one time Lord Mayor of London, was originally a working engraver.—Breguet, a celebrated maker of chronometers at Paris, and who has never been surpassed in this line of trade, was originally a poor Swiss boy, who went through some extraordinary difficulties at his outset, but surmounted the whole by perseverance and talent.—Michael Bruce, a Scottish poet of great merit, was a village schoolmaster at Kinneswood, in Kinross-shire, and contended long with poverty and sickness.—The Scottish poet Burns, as is well known, was born a peasant in Ayrshire, and his early life was spent as a ploughman.—Caslon, an eminent typefounder in London, was originally an engraver of ornaments on gun-barrels; but being noticed by some printers for the elegance of his lettering, he was induced to become a cutter of types, in which he acquired a handsome fortune.—Cavalier, the famous leader and protector of the Camisards, or Protestants of Languedoc, when an attempt was made to exterminate them by Louis XIV., was the son of a peasant, and was bred a journeyman baker: he afterwards distinguished himself in the English service, in which he died, 1740.—Ephraim Chambers, the compiler of a well-known dictionary of arts and sciences, was the apprentice of a mathematical instrument maker; and it was while in this occupation he projected his dictionary, some of the articles of which he wrote behind the counter.—Cullen, who rose to such eminence as a physician, was originally apprentice to a surgeon and apothecary in Glasgow, and supported himself in early life by making several voyages, as surgeon, to the West Indies.—Curran, the eminent Irish barrister, was born of humble parents, and had to struggle with want of practice, and consequent penury, before he became known, and rose to such splendid forensic fame.—Sir William Davenant, an eminent dramatic writer, and partisan of Charles I., was the son of an innkeeper at Oxford.—James Dickson, the author of some eminent works on botany, and one of the founders of the Linnæan Society in London, was originally a working gardener, and rose by his own exertions.—Falconer, the author of "the Shipwreck," was the son of a barber at Edinburgh (by others he is said to have been a native of Fife), and entered the merchant service when young: he underwent many difficulties, and was at last drowned in a voyage to India.—George Fox, the founder of the Society of Friends, or Quakers, was the son of a weaver, and he himself served an apprenticeship to a grazier, and was employed in keeping sheep; the silence and solitude of which occupation pro-

duced a zealous religious feeling, which led to the propagation of his new scheme of human society.—Andrew Fuller, a celebrated Baptist minister, and author of some works of merit, in the last century, wrought as a peasant till he was twenty years of age.—Madame de Genlis, whose maiden name was Ducrest de St Aubin, felt the stings of adversity and poverty in her youth, and depended on her musical abilities for support, till married to the Count de Genlis.—Gifford, the late distinguished editor of the Quarterly Review, began life under great disadvantages. He was left an orphan at thirteen; was put to sea as a cabin-boy; was afterwards bound to be a shoemaker, and was rescued from his humble fate at twenty years of age, by the kindness of Mr Cooksley, a surgeon: Gifford was so utterly poor while a shoemaker, that he could not buy paper, and used to work algebraical questions with a blunted awl on fragments of leather.—Gray the poet was brought up in great poverty, and supported in his education entirely through the extraordinary exertions of his mother.—John Harrison, who received the reward of L.20,000 from Parliament, for his famous timekeeper to determine the longitude at sea, was the son of a carpenter, and instructed himself in mechanics.

Hawkesworth, the author of the *Adventurer*, was the son of a watchmaker, and was at first brought up to that profession. He afterwards became a clerk to a stationer, and then rose to distinction as a literary character.—Sir John Hawkwood, a distinguished military commander of the fourteenth century, was originally an apprentice to a tailor, but entering as a private soldier, he rose to eminence.—Haydn, one of the most celebrated music composers, was the son of a poor cartwright.—Herder, a German philosopher and writer, and who has been called the Fenelon of his country, was born of poor parents, and nurtured in adversity.—General Hoche, who commanded an expedition against Ireland, in 1796, began life as a stable-boy.—Joan of Arc, who by her heroism delivered France from the English, was born of poor parents, and supported herself in early life by keeping sheep, and taking care of horses at a country inn.—Samuel Johnson was the son of a bookseller at Litchfield, and attempted to support himself by keeping a school: before he became known, and was patronised by the crown, he had to endure severe pecuniary difficulties.—Henry Jones, a poet and dramatist of last century, was born of poor parents at Drogheda, and was bred a bricklayer.—The famous Paul Jones was the son of a working gardener, and commenced his maritime life as a sailor boy.—La Harpe, a French dramatist, poet, critic, and miscella-

neous writer, was the son of a Swiss officer, who died in poverty, and left him an orphan, in such destitute circumstances that he was supported by the Sisters of Charity, and it was by their recommendations that he was gratuitously educated.—Lannes, Duke of Montebello, and a marshal under Napoleon, who esteemed him highly for his bravery, was born of poor parents, and was, at his outset in life, a common dyer.—David Levi, a Jew of considerable literary talent, and author of a variety of works, was first a shoemaker, and next a hatter, but contrived to acquire a respectable portion of learning.—Maitland, the historian of London and Edinburgh, began the world as a travelling dealer in hair.—Benjamin Martin, who flourished as a writer on science at the beginning of the last century, was originally a farmer's labourer, but by dint of perseverance he acquired sufficient learning to become a school-master, and afterwards a lecturer on experimental philosophy.—Moliere, the eminent French dramatic writer, was the son of a valet-de-chambre.—Murat, one of the most intrepid of the French marshals, was the son of an innkeeper at Bastide.—Ney, "the bravest of the brave," was the son of an artisan.—Samuel Richardson, the author of *Sir Charles Grandison* and other works of fiction, was the son of a joiner, and had a very scanty education : he was bound an apprentice to a printer, and by his genius and perseverance rose in his profession, and became an eminent literary character.—Rousseau, one of the most eminent French writers, was the son of a watch-maker ; and being apprenticed to an engraver, he was so ill treated by his master, that he ran away before he was sixteen : his education was totally neglected, and for years he wandered as a vagabond, seeking a precarious subsistence ; yet, by his natural abilities, he brought himself into notice and fame.—Ruyter, the famous Dutch admiral, began the world at eleven years of age as a poor sailor boy.—The illustrious Shakspeare was the son of a dealer in wool ; and such was the poverty of the young dramatist, that he employed himself first as a prompter's call-boy ; other accounts represent him as holding gentlemen's horses at the door of the playhouse.—Shield, the famous English violinist and musician, was the son of a singing-master, who left him fatherless ; his early years were spent as an apprentice to a boat-builder, but his genius led him from this occupation to that of music, in which he was eminently successful.—Jeremy Taylor, an eminent theologian and prelate of the seventeenth century, was the son of a barber.—Toussaint L'Ouverture, who was appointed governor and president of the free black republic of St Domingo, was born a slave, in which condition he remained till the revolution in

the island brought forward his abilities and courage.—Walenstein, a celebrated German general, began life as a page to the margrave of Burgau.—Webbe, who has been so celebrated for his musical compositions, especially his gleees, was originally a destitute boy, who gained a meagre subsistence by copying music; but by dint of incessant study, he became an excellent composer.

West, the American painter, was the son of a Quaker, and had many difficulties to contend with at his outset.—Jarvis Spencer, a miniature painter of last century, was originally a valet, or menial servant.—Hanam, the painter, was at first the apprentice of a cabinetmaker.—Richard Wright and Lawrey Gilpin were originally ship-painters.—Barry, an Irish painter, was originally a working mason.—Allan Ramsay, the Scottish poet, was the son of a workman at Leadhills, and began life as a wig-maker.—Stow, the author of the Survey of London, and Speed, the author of the History of Great Britain, were originally tailors.—And Anthony Purver, a self-instructed man of learning, and a preacher; Joseph Pendrell; Bekman, the German; Holcroft, the novelist; Bloomfield, the poet; and Drew, the metaphysician, were all originally members of the "gentle craft" of shoemaking.

CONCLUSION.

HAVING now presented an ample list of persons who originally were in humble and apparently unfavourable circumstances, but eventually rose, by a certain course of behaviour, either to eminent and lucrative situations in life, or to the enjoyment of well-merited fame, we shall conclude with a few words of advice to the young, relative to the means of their advancement in society, and the gaining of the approbation of their fellows.

It is very certain that all men are not born to be Franklins, and, likewise, that if any considerable number of such persons were to arise, their utility and their distinction would be diminished. There is a good old proverb, however—"aim at a silk gown, and you may get a sleeve of it;" which may be followed out, both to the advantage of individuals and to the benefit of the community. As it, therefore, would seem proper that every means should be taken to inspire youth with

the ambition of well-doing, we make no apology for laying the following general observations before the public.

First, there is one great maxim that no youth should ever want before his eyes, namely, that hardly any thing is beyond the attainment of real merit. Let a man set up almost any object before him on entering life, and if his ambition be of that genuine kind which springs from talent, and is *not too much for his prudence*, there is a strong chance in his favour that a keen and steady pursuit of the object will make him triumph at last. It is very common, when the proposal of a young man's entry into life is discussed, to hear complaints as to the pre-occupation of every field of adventure by unemployed multitudes. There may occasionally be some cause for this; but the general truth is undeniable, that, in spite of every disadvantage, men are rising daily to distinction in every profession—the broadest shoulders, as usual, making their way best through the crowd. It is the slothful and the fearful that generally make such complaints; and they obviously do so in order to assure themselves that they are not altogether wrong in continuing to misspend their time. When we hear of the overcrowded state of any proposed profession, we are apt to overlook that an immense proportion of those engaged in it are destined, by the weakness of their character, and want of specific qualifications, to make no way for themselves, and must soon be the same, so far as rivalry is concerned, as if they had never entered it. If the entrant, then, has only a well-grounded confidence in his own powers of exertion and perseverance, he need hardly be afraid to enter any profession. With the serious desire of well-doing at heart, and some tolerable share of ability, he is sure very soon to get ahead of a great proportion of those already in the field. Only let him never despair—that is, tell himself it is all in vain, in order that he may become idle with a good conscience—and there is hardly any fear of him.

We entertain some different ideas respecting original humility of circumstances from what are generally prevalent. The common notion is, that humble circumstances are a great obstruction at the outset of life, and that the more difference between a man's origin, and his eventual condition, the greater is the wonder, and the greater his merit. Since it appears, however, that so large a proportion of distinguished men were poor at the beginning, a question may naturally arise, Are not men just the more apt, on that account, to become eminent? Although we are all familiar as possible with instances of fortunes made from nothing, it will be found, on recollection, that cases are comparatively

rare of men who began with fortunes having ended by greatly increasing them. Many a poor boy has made twenty thousand pounds before he was forty years of age; but few who had ten thousand at the age of majority are found to double it with their years. Here—here is a reason for hope. The fact is, large sums are not to be acquired without an appreciation and an understanding of the meanest financial details. To make pounds, we must know the value of shillings; we must have felt before how much good could sometimes be done, how much evil could sometimes be avoided, *by the possession of a single penny!* For want of this knowledge, the opulent youth squanders or otherwise loses more, perhaps, than he gains. But he who has risen from the ranks, knows the value and powers of every sum, from the lowest upwards, and, *as saving is the better part of the art of acquiring money*, he never goes back a step—his whole march is ONWARD. At the very worst, it is only a question of time. Say one man begins at twenty with a good capital, and another at the same age with none. For want of experience, and through other causes above mentioned, it is not likely that the former person has made much advance within the first ten years. Now, ten years is an immense space to the individual who only commenced with good resolutions. In that time, if he has not accumulated actual money, he may quite well have secured good reputation and credit, which, prudently managed, is just money of another kind. And so, while still a young man, he is pretty much upon a par with him who seemed to start with such superior advantages. In fact, fortune, or original good circumstances, appear to us as requisites of a very unimportant character, compared with talent, power of application, self-denial, and honourable intentions. The *fortunate*—to use the erroneous language of common life—are selected from those who have possessed the latter indispensable qualifications in their best combinations; and as it is obvious that young men of fortune (necessarily the smaller class) have only a chance, according to their numbers, of possessing them, it follows, as a clear induction, that the great mass of the prosperous were originally poor.

TALENT.—It is a common cry that those who succeed best in life are the dullest people, and that talent is too fine a quality for common pursuits. There cannot be a greater fallacy than this. It may be true that some decidedly stupid people succeed through the force of a dogged resolution, which hardly any man of superior genius could have submitted to. But we are disposed to dispute, in a great measure, the existence of talent, where we do not find it at once productive of superior

address in ordinary affairs, and attended by a magnanimity which elevates the possessor above all paltry and vicious actions. The genius which only misleads its possessor from the paths of prudence, or renders him a ridiculous and intolerable member of society, is too much allied to Bedlam to be taken into account; and in reality there is nowhere so much of what is called genius as in the madhouses. The imputation of dullness to a man who has prospered in life, will be found by impartial inquirers, in nine cases out of ten, to be a mere consolatory appliance to the self-love of one who has neither had the talent nor the morality to prosper in life himself. Let every man, then, who possesses this gift, rejoice in it with all his heart, and seek by every means to give it proper guidance and direction.

APPLICATION is another of the indispensable requisites. Detached efforts, though they may individually be great, can never tell so well in the aggregate as a regular and constant exertion, where the doings of one day fortify and improve the doings of the preceding, and lead on with certainty to the better doings of the next. It is not economical to work by fits and starts; more exertion is required by that system, for a certain end, than what is necessary in the case of a continuous effort, and thus the irregular man is apt to fall far behind his rivals. Men of ability are apt to despise application as a mean and grubbing qualification—which is only a piece of overweening self-love on their part, and likely to be the very means of frustrating all the proper results of their ability. On the other hand, the industrious man is apt to despair for want of ability—not seeing that the clever fellows are liable to the weakness we describe, which causes them to be constantly giving way in the race to mere plodders. Besides, while few faults are more common than an over-estimation of one's self, it is equally obvious that many men only discover their abilities by chance, and that all of us possess latent powers, which might be turned to good account, if we only knew and had confidence in them. No man, therefore, should be too easily dashed on the subject of his abilities. He should try, and, with the aid of a persevering industry, he may do wonders such as he never dreamt of.

SELF-DENIAL.—Perhaps among all the qualifications which, in a combined form, lead to fortune, none is more absolutely indispensable than this. A man may have talent, may have application, both in abundance; but if he cannot resist vulgar temptations, all is in vain. The Scotch, as a nation, are characterised immensely by self-denial, and it is the main ground of their prosperity both at home and abroad. It is one of the

noblest of the virtues, if not, indeed, the sole virtue which creates all the rest. If we are obliged at every moment to abandon some sacred principle in order to gratify a paltry appetite; if the extensive future is perpetually to be sacrificed for the sake of the momentary present; if we are to lead a life of Esau-like bargains from the first to the last—then we are totally unfit for any purpose above the meanest. Self-indulgence makes brutes out of gods: self-denial is the tangent line by which human nature trenches upon the divine. Now, self-indulgence is not inherent except in very few natures; it is almost invariably the result of “evil communications” in youth, and generally becomes a mere use or habit. The most of error arises from the contagion of example. A youth at first debauches himself because he sees others do it; he feels, all the time, as if he were sacrificing merely to the glory of bravado; and there is far more of martyrdom in it than is generally supposed. But though a person at first smokes in order to show how much disgust he can endure, he soon comes to have a real liking for tobacco. And thus, for the paltriest indulgences, which only are so from vicious habit, and perhaps, after all, involve as much dissatisfaction as pleasure, we daily see the most glorious and ennobling objects cast, as it were, into hell-fire.

We are by no means hostile to all amusement. The mass of men require a certain quantity of amusement almost as regularly as their daily food. But amusement may be noxious or innocent, moderate or immoderate. The amusements which can be enjoyed in the domestic circle, or without company at all, are the safest; there is great danger in all which require an association of individuals to carry them into effect. Upon the whole, a multitude of bosom friends is the most pernicious evil that ever besets a man in the world. Each becomes a slave to the depraved appetite of the rest, and is at last ulcerated all over with their various evil practices. At the very best, he is retarded to the general pace, and never finds it possible to get a single vantage hour, in order to steal a march upon his kind.

HONOURABLE INTENTIONS are also indispensably necessary. The reverse is simply want of sense and understanding; for it is obvious to every one who has seen the least of human life, that infinitely more is lost in reputation and *means and opportunities of well-doing*, by an attempt to gain an undue advantage, than what can in general cases be gained. If we had to live only for a short time certain, trickery might be the most expedient course, so far as this world is concerned; but if a man contemplates a life above a single twelvemonth,

he will endeavour, by the guarded correctness of his actions, to acquire the good character which tends so much to eventual prosperity. The dishonest man, in one sense, may be termed the most monstrous of all self-flatterers: he thinks he can cheat the whole of the remaining part of mankind—which certainly is no trifling compliment. He soon finds, however, that he was seen through all the time by those whom he thought mere children, and his blindness and silly arrogance receive their deserved punishment. Even where the depravity may be of a very slight kind, it is alike in vain. In ordinary transactions, the one party deals with the other exactly according to his character: if the one be in general disposed to overreach, the other is just proportionably on his guard; so that there is no result but trouble, and a bad name.

Such are the principal qualities necessary for advancement in life, though any one of them, without much or any of the other, will, if not counteracted by negative properties, be sure to command a certain degree of success. He who is about to start in the race would do well to ponder upon the difficulties he has to encounter, and make up a manful resolution to meet them with a full exertion of all his powers. To revert to the general question—what is it that enables one man to get in advance of his fellows? The answer is obvious—it can only be his *doing* more than the generality of them, or his *enduring more privation* than they are generally inclined to do [that is, self-denial], in order that he may acquire *increased power of doing*. The fault of most unsuccessful persons is their want of an adequate idea of what is to be *done*, and what is to be *endured*. They enter business as into a game or a sport, and they are surprised, after a time, to find that there is a principle in the affair they never before took into account—namely, the tremendous competition of other men. Without being able to do and suffer as much as the *best* men of business, the *first* place is not to be gained: without being able to do and suffer as much as the *second* order of men of business, the *second* place is not to be gained: and so on. New candidates should therefore endeavour to make an estimate of the duties necessary for attaining a certain point, and not permit themselves to be thrown out in the race for want of a proper performance of those duties. They should either be pretty certain of possessing the requisite powers of exertion and endurance, or aim at a lower point, to which their powers may seem certainly adequate.

In conclusion, we beg to warn the young against falling into an error which has wrecked many noble minds, and prevented thousands from rising in the world who should otherwise have

been an ornament to society. This error consists in being too fondly attached to any particular place, such, for instance, as the place of birth. It will have been remarked, in perusing the preceding sketches, that almost every man of note rose not only from his perseverance and ingenuity, but from his having migrated from the obscure scene of his childhood to a locality affording greater scope for the exercise of his abilities. In recommending a step of this kind to the young, we necessarily imply, that every one must be governed to a certain extent by circumstances, and be careful not to run into the opposite extreme of unsettledness and rashness, in the laudable attempt to avoid being accused of apathy or indolence. With this caution in remembrance, let us press upon general attention the extensive public and private injury which is committed by too strong an attachment to place. It seems to be a law of Nature, that mankind should disperse themselves—not take root in the soil, as if they were vegetables; and, surely, it is possible to retain an affectionate remembrance of the spot of our nativity, and yet plant ourselves somewhere else—go where bread is more honourably to be obtained, and where, at least, there is room for unembarrassed action. The slavish attachment to place, which many unreasonably maintain, has frequently the effect of fixing young men to professions the most laborious and ill-requited, while, by a slight exertion at the outset, or when opportunities offered, they might have placed themselves in the way of spending their existence in pursuits highly advantageous to themselves and to others. The consequences which ordinarily arise in the aggregate from this improper attachment, are poverty, narrow-mindedness, and moral degradation. What the consequences are of acting from an opposite sentiment, under the influence of judgment, have been amply illustrated in the volume before us. All may not be so successful as the subjects of our examples; “the race is not always to the swift, neither the battle to the strong;” but those who aspire from a rational feeling of emulation, in the way we have pointed out, will undoubtedly attain the happy reflection that they have done their duty to the best of their ability, which of itself is one of the highest gratifications which a virtuous mind can feel.

END OF EXEMPLARY BIOGRAPHY.

